Index to Contents, July, 1941

(The Annual Index to Contents appears at the back of the December issue each year)

Airports and Aviation
City Airport Expanded for Defense 11
Topeka Airport Recently Completed 11
Chicago's Airport Nears Completion 11
The Service of Flight Strips to Cities and Local Areas 37

Business Equipment
Interior Telephones for City Departments 61
Production Accounting at Bridgeport 63
Safes and Files in Actual Fires 74
Reduce City Records to a Handful 77

Carillons
Singing Tower Given to a Virginia Town 84

Census
1940 Urban and Rural Population Classified by Size of Place 68
Census Study of State and Local Public Debt: 1940 71

Civic-Commercial Organizations
Summer Institutes for Civic-Commercial Organization Executives 76
Omaha Takes on New Life 82

Conventions
Conventions—When and Where 107

Defense, National
Federal Aid for Local Public Works 5
City Airport Expanded for Defense Need 11
Defense Boom Town Rushes New Sewers 13
A Mayor Looks at Public Housing and at Defense Needs 43
President and Vice-President Stress Importance of Housing to Defense 62
Houston Mobilizes for Soldiers' Needs 83
Defense Against Aerial Attack 85
Sweeper Cleans Up Around Army Bomber 127

Finance and Taxation
Census Study of State and Local Public Debt: 1940 71
The Municipal Bond Market 89

Fire Prevention and Control
New York City's Fire Auxiliary 15
Big Extension of Fire-Alarm Lines 15

Forward Steps
Items by Officials and Others 82

Government and Administration
Omaha Takes on New Life 82
All New York Local Governments to Be Under Civil Service 89

Hallowe'en Celebrations
Letter from National Recreation Assn. 94

Housing
A Mayor Looks at Public Housing and at Defense Needs 43
Housing Photographic Contest 46
More Areas Eligible for Defense Housing 53
President and Vice-President Stress Importance of Housing to Defense 62

Insurance, Municipal
Safety Brings Lower Insurance Costs 73

Labor Problems
Labor Board Improves Toledo Labor Picture 82

Legal Decisions
Zoning and Planning Notes 103
Municipal Law Notes and Decisions 105

Lighting, Outdoor
Dickerson Urges Lightup Instead of Blackout 15
Longest Lighted Highway in the South 97
Simple Rates for Street Lighting 97
For Safer Highways 99
Lighting to Fit the Traffic 99
Show Night and Day Accident Statistics 99
Fifth Year of Illuminated Cascades 99
Striking Bits of Modern Lighting 101

Motor Equipment
Adjustable Machine for Refilling Road Brooms 119
A Tractor Shovel for Municipal Use 123
Tank-Trailer Unit Cleans N.Y.C. Tunnel 125
Sweeper Cleans Up Around Army Bomber 127

News and Illustrations
News and Illustration Hints for Officials 117

Parks and Recreation
Park Development Unearths a Fortune 7
The Harrisburg Municipal Rose Garden 49
"Time on Their Hands" 70

Planning and Zoning
Construction Town Proves Value of Far-Sighted Planning 40
New Attack Proposed on Urban Blight 48
Planning a Reservoir of Public Construction 50
By-Passes Need Zoning Protection 60
Problem Areas Graphically Shown 79
To Get Intelligent Planning Done 80
Factors Affecting Fruitful Local Planning 81
Practical Community Planning, Hill, N. H. 89
Zoning and Planning Notes 103

Police
Highly Selective Police Radio 15

Power Plants
More Municipal Electric Plants? 7
Take Charlevoix, Mich. 51
Sewage-Gas Utilization for Heat and Power 75
Diesel-Electric Units for Standby Service 121

Publications
New Books and Pamphlets 109

Public Relations
Local Government Is News 65

Public Works
Federal Aid for Local Public Works 5
Planning a Reservoir of Public Construction 50

Purchasing
Cincinnati's Municipal Purchases, 1940 64

Real Estate, City
A City's Experience in Owning Real Estate 67

Safety
Safety Brings Lower Insurance Costs 73

Sewers and Sewage Disposal
Steel Tanks at Greenville Plant 13
Sewer Rentals Upheld by Ohio Court 13
Defense Boom Town Rushes New Sewers 13
Sewage-Treatment Plant, Bagley, Minn. 13
Sewage Treatment, Embarkation Post 54
Sewage-Gas Utilization for Heat, Power 75

Smoke Abatement
Industries and Homes Combine for a Smokeless Birmingham 45

Street Cleaning and Snow Removal
Clean Streets, Summer and Winter 39
Adjustable Machine for Refilling Road Brooms 119

Street Construction and Maintenance
Fifty Years of Paving in Toledo, Ohio 47
Improving Gravel Roads, Middleboro 59
New Bulletin on Small Trencher 117
A Tractor Shovel for Municipal Use 123

Swimming Pools
Let's Reduce Drownings This Year 7
Aquatic Park in San Francisco, Calif. 7
A Modern Municipal Swim Pool 15
City Provides Better Baths 69

Traffic Control and Facilitation
Traffic Sign Designed by City Manager 83
Transit Expert Views Pedestrian Perils 91
Parking Meters in Minneapolis 95

Water Supply and Purification
The Contribution of PWA to American Water Works 9
Activated Carbon from Coal Refuse 9
Are You So Bad After All? 9
Wash-Water Tank, Filtration Plant 9
Migrations Cause Water Utility Problem 55
Collection and Conservation of Water in Honolulu 56
Water—Zero Hardness, for Baton Rouge Consumers 72
Improved Pump Design Increases Efficiency 119
Device Demonstrates Water Use to Customers 119
New Hydraulic Tool Aids PipeAssembly 123
Increased Efficiency for Zeolite Softening 127
Meter Division Introduces New Meter 129

VOL. LVI JULY
No. 7 1941

The American City

Issued Monthly by the
American City Magazine Corporation
470 Fourth Ave., New York
EDGAR J. BUTTENHEIM, President
HAROLD S. BUTTENHEIM, Editor
THEODORE REED KENDALL
Engineering Editor
M. V. FULLER, Associate Editor
ALDEN W. WELCH, Secretary
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Daily News Building, Chicago
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Subscription, $2 per annum in United States and Canada ($3 to foreign countries)
Single copies, 35c
Back numbers, 50c

Entered as second-class matter, July 29, 1910, at the Post Office at New York, N. Y., under Act of March 3, 1879.
Printed in U. S. A.

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IN THE MUNICIPAL INDEX AND ATLAS (the annual reference volume of data and condensed catalogs published by the American City Magazine Corporation) readers will find statistical material, and articles on a wide variety of municipal and public works subjects, not published in the monthly issues of the magazine.

See pp. 17, 18, 21, 22, 109, 111, 113, 115 for catalogs and publications on municipal and civic subjects

For Index to Advertisements see page 132

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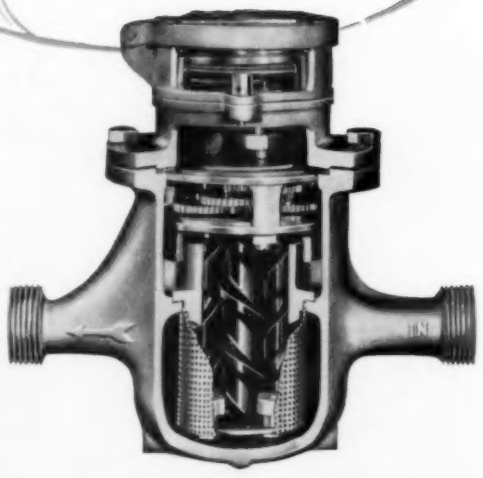
A new Bulletin, W-531, describing a new chapter in water meter history and the Pittsburgh IMO Meter will be sent upon request.



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Remember—PITTSBURGH IMO METERS WEAR IN WHERE OTHERS WEAR OUT

Federal Aid for Local Public Works

$150,000,000 *for Community Facilities in National Defense Areas*

DURING the closing days of June, the Lanham bill (H. R. 4545) authorizing Federal aid to municipalities to the extent of $150,000,000 for public works and community facilities in national-defense areas was adopted in modified form by both houses of Congress and signed by the President.

Under the terms of the law as enacted, such works and facilities may include schools, water works, water treatment and purification works, sewers, sewage-, garbage-, and refuse-disposal facilities, public sanitary facilities, hospitals, recreation facilities, streets, and access roads. Whenever the President finds that in any defense area or locality there is an acute shortage of public works necessary to the health and welfare of persons engaged in national-defense activities which would impede such activities, and that such public works cannot be provided without a greatly increased tax burden or an excessive increase in the debt limit of the taxing or borrowing authority, the Federal Works Administrator is authorized, subject to approval by the President, to acquire land by purchase, donation, exchange or lease; to make surveys, plan, design and construct, remodel, extend or repair public works; and make loans or grants, or both, to public and non-profit private agencies for public works upon such terms and conditions as the Administrator finds to be in the public interest. Public works are to be provided on the basis of need and without discrimination on account of race, creed, or color.

The use of cost-plus-a-fixed-fee contracts is permitted with a proviso that the fee is not to exceed 6 per cent of the estimated cost of the contract, but contracts on a cost-plus-a-percentage-of-cost basis are prohibited. Wherever practicable, existing facilities, both public and private, are to be enlarged and extended in place of constructing new facilities. Public works will be maintained and operated by the United States only to the extent that local public and private agencies are, in the opinion of the Administrator, unwilling or unable to furnish adequate operation with their own personnel and under loans or grants authorized by the Act. No department or agency of the United States may exercise any supervision or control over any school or hospital as to which funds have been expended under the bill.

Launching the Program

WITH nearly $500,000,000 of proposals filed in the office of the Federal Works Administration in anticipation of the enactment of the $150,000,000 appropriation for defense public works, FWA Administrator John M. Carmody is moving rapidly to make the new funds available for communities otherwise unable to cope with the demand for public works in the face of phenomenal growth of population due to the expansion of defense industry and enlargement of military reservations and posts.

Announcement is made of the assignment of the program to a newly created special division of the Public Works Administration. Col. M. E. Gilmore, Commissioner of Public Works, will be in charge of this new division of Defense Public Works, and eleven regional directors have been appointed to study needs and applications.

In a statement on July 1, outlining procedure under this new program, Administrator Carmody said:

"The acid test which will be applied in our consideration of applications will be the direct connection of the project with national defense. The funds provided for this program are not sufficient to permit the inclusion of any 'fringe' projects—undertakings less directly connected with defense activities or having to do with the normal needs of communities. Priorities, then, under this program, will be determined on the basis of needs in the interests of national defense."

In previous PWA programs the amount of the grant was 45 per cent of the cost of the project. In the defense public works program there is no fixed amount of direct Federal grant. Instead, the Administrator is authorized, with the approval of the President, to determine the amount of grant justified in each situation.

"It's just human nature to give the squarest shooter the best break," Mr. Carmody said. "Quick decisions to participate on the most generous scale possible on the part of communities will expedite construction. We will argue first with those who have money to carry a share of the cost and then take on the rest later."

Regional and Project Offices

The numbers of the regional offices, with the states in their respective areas, the regional director of each and his headquarters city are:

1. New York, New Hampshire, Maine, Massachusetts, Rhode Island, Connecticut and Vermont; Regional Director, James A. McConnell, Boston, Mass.

2. Pennsylvania, New Jersey and Delaware; Regional Director, William J. Finley, Philadelphia, Pa.

3. Virginia, West Virginia, Maryland, North Carolina, and the District of Columbia; Regional Director, C. L. Vickers, Richmond, Va.

4. Florida, South Carolina, Tennessee, Georgia, Alabama and Mississippi; Regional Director, Lester M. Marx, Jacksonville, Fla.

5. Michigan, Ohio, and Kentucky; Regional Director, George W. McCordic, Detroit, Mich.

6. Illinois, Indiana, Iowa, Wisconsin, Minnesota, North Dakota, South Dakota and Nebraska; Regional Director, D. R. Kennicott, Chicago, Ill.

7. Missouri, Kansas, Oklahoma and Arkansas; Regional Director, Blair Boyle, Kansas City, Mo.

8. Texas and Louisiana; Regional Director, George F. Harley, Fort Worth, Texas.

9. Colorado, Wyoming, Idaho, Utah and New Mexico; Regional Director, George Bull, Denver, Colo.

10. California, Nevada and Arizona; Regional Director, Wright L. Felt, Los Angeles, Calif.

11. Washington and Oregon; Regional Director, Lindley R. Durkee, Seattle, Wash.

Project Engineers: New York, Charles D. Drew; Birmingham, Ala., W. G. McConnel.

The regional directors, most of whom have served in similar capacities in the Public Works Administration, will be responsible to the Commissioner of Public Works. In organizing the regional and central office staffs, experienced engineers and other PWA personnel are being recalled from furlough.

Defense Highways and Defense Housing

IN A special message by the President on June 2, Congress was asked to provide $125,000,000 in appropriations for defense highways and bridges included in the War Department's strategic networks, together with access roads for cantonments, etc. A substantially greater amount—more than $275,000,000—would be authorized for these purposes in a bill on which the House Roads Committee has ordered a favorable report, after hearings (H.R. 5110). On June 16 the Senate passed a similar bill for these purposes but limited the total of appropriations authorized to $250 million (S. 1580).

Defense-housing appropriations of $300 million authorized by the Act of October 14, 1940, would be increased by an additional $300 million to be used to provide at least 125,000 additional homes for defense workers by July 1, 1942, according to a request submitted to Congress by the President on June 26 and soon to be considered by the House Public Buildings and Grounds Committee.

Better Put In Your Own WELL WATER SUPPLY

A NATIONAL emergency exists! You have been called upon to "keep your wheels turning"—and production at its peak. A water shortage, or failure would play havoc with your program. Save time, worry and possible shut down by putting in your own Well Water System.

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Layne Engineers will cooperate gladly in making a survey of your water supply needs. They are qualified specialists in Well Water Supply problems, and will collaborate with you, your engineer or plant superintendent. There is no obligation.

"For Defense" is a new bulletin just issued which pictures and lists defense work completed for air fields, army camps, munition plants, etc., by Layne. It is free. Address

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Our Municipal Notebook

More Municipal Electric Plants?

THE FEDERAL POWER COMMISSION'S EIGHTH REPORT on "Electric Power Requirements and Supply in the United States" points out that the defense program has been expanded so rapidly that estimates of future load cannot be kept completely up-to-date. Significant conclusions are summarized as follows:

1. Many areas of the country are now actually facing power shortages.

2. Even on the basis of the unrevised December estimates of 1942 demand, it now appears that the 5,751,615 kw of new capacity scheduled for operation in 1941 and 1942 will fall some 570,000 kw short of meeting the expected demands in certain areas. This deficiency is likely to rise to 1,400,000 kw as a result of expansion of the defense program since those estimates were prepared.

3. Power demands are continuing to grow more rapidly than the utility systems anticipated in December.

4. Although higher capacities are being assigned to existing generating facilities, it is obvious that these do not represent real increases; such practices, if carried beyond sound judgment, may prove dangerous to the defense program and inimical to the best interests of the country.

5. During the first three months of 1941 the reporting utilities ordered 1,481,000 kw of generating capacity. The new generating capacity scheduled for operation during the period April 1, 1941, to December 31, 1942, totals 5,751,615 kw; that scheduled for operation in 1943 totals 1,146,000 kw, while new capacity now scheduled for operation in 1944 and 1945 amounts to only 165,000 kw and 300,000 kw respectively.

These conclusions suggest strongly that unless orders are placed immediately for large amounts of additional capacity for 1943, serious shortages will develop in that year, and in subsequent years if the emergency continues. From two to three years are required to complete the manufacture and installation of generating facilities, with every indication that even longer periods may be required as the defense program expands.

Now if ever, municipal electric plants need to pursue a policy of long-time planning. Those plants serving essential industries are in a position to obtain new prime movers and other necessary power and line equipment. Diesel-engine manufacturers are running at top capacity, with delivery in a year about the best that can be offered on new orders. Those municipal generating plants not serving defense factories need to get their orders in with least delay if they are going to need another diesel unit within the next few years.

Park Development Unearths a Fortune in Peat Moss

FIFTY ACRES OF BARREN FILLED LAND in the Queens section of New York is being transformed by the Work Projects Administration into a recreation center that will complete Juniper Valley Park, which was begun several years ago after the city took over the land from the estate of the late Arnold Rothstein.

The development of the 50 acres includes filling and grading; planting of 540 shade trees and thousands of shrubs; installation of drainage and lighting systems and concrete benches; erection of chain-link fences; and construction of paved areas with 14,000 square yards of bituminous and concrete surface.

Soon after the park site was taken over from the Rothstein estate for nonpayment of taxes, city engineers discovered that the gambler's property overlay a hidden fortune in peat moss, and 250,000 cubic yards of the material was excavated by WPA. At a price of $4 to $4.50 per bale in 20-bale lots, the value of this find runs to more than $3,000,000. This work progressed during filling operations by the Sanitation Department and park development by WPA. The last of the peat moss will be used in landscaping the new sections of this city park development.

Let's Reduce Drownings This Year

EVERY 30 MINUTES THIS SUMMER someone in America is drowning, and 5,000 are predicted as the toll, according to the National Conservation Bureau. At least 25 per cent of these fatalities are boys and girls of 13 to 19, and six out of every seven are males.

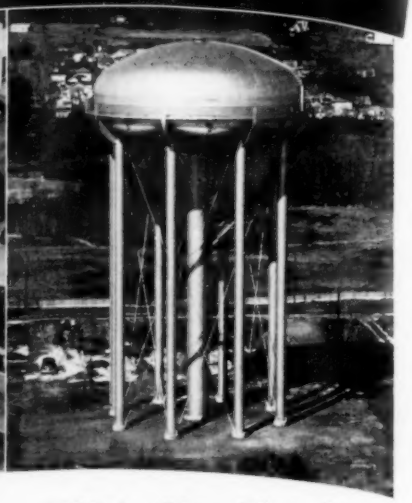
A few reminders: Danger of cramps may be largely eliminated by waiting an hour after eating before going in the water; do not swim when overheated or remain in the water when chilled or exhausted. More than 200 persons are killed each year in diving accidents. Non-swimmers or poor swimmers cannot save a drowning person. Remember that "drowned" persons have been resuscitated after more than seven hours of artificial respiration.

Aquatic Park in San Francisco, Calif.

HORTON ELEVATED WATER TANKS

1,000,000-gal. spheroidal elevated tank at Jonesboro, Ark.

100,000-gal. welded steel Watersphere installed at Monon, Ind.



750,000-gal. radial-cone bottom unit installed at Kalamazoo, Mich.

offer DEPENDABLE-LOW COST Service

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300,000-gal. tank, Pleasant Hill, Md.

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Water-Works and Problems

The Contribution of PWA to American Water Works

SINCE 1933, THE PUBLIC WORKS ADMINISTRATION, PWA to us, has made direct grants of $141,142,821 and repayable loans of $65,931,283, toward water-works projects costs of $380,795,162 in the United States. All but 17 of these 2,691 water-works projects have been completed and are in use. The 17 projects still under construction include new systems for metropolitan Boston; Harrisburg and Bethlehem, Pa.; Chicago; Toledo; and Tacoma, Wash.

An outstanding feature of this water-works construction program has been the large number of villages, towns and unincorporated communities which have been enabled to install public water systems. Hundreds of communities which had been unable to afford public water works, formed water districts or incorporated as villages or towns in order to obtain PWA aid in providing the advantages of public water-works systems to their citizens. An analysis of the PWA water-supply projects shows that 700 communities, ranging in population from 200 to 6,000, installed complete new water systems, 75 of the communities having a population of less than 1,000. At the same time, many of the large metropolitan centers, including Boston, New York, Toledo, Cleveland, Chicago, Denver and San Francisco, installed needed improvements to their water systems.

A breakdown of the 2,691 projects shows that there were 799 new systems installed, costing $41,055,149, which represents an average of $51,300. In addition to new systems, there were allotments for 1,803 projects, which included additions and improvements to existing systems at an estimated cost of $329,893,051. A third item includes 89 multiple-type projects under which new water-works systems were combined with highway or street construction, hydroelectric plants, sewage-treatment systems, or those designed to serve various institutions such as hospitals and jails.

Activated Carbon from Coal Refuse

BULLETIN R. I. 3548, by S. J. Broderick and E. S. Hertzog, recently issued by the Bureau of Mines, U. S. Department of the Interior, Washington, D. C., bears the title "Activated Carbon from Coal Refuse for Water Purification." This report is based on investigations carried out in cooperation with the University of Alabama which have demonstrated that the refuse from coal-mine washeries generally contains some good coal mixed with the waste, and that this coal may be made into activated carbon, a substance which is used now for water purification by many progressive water-supply plants.

The experiments were undertaken as part of a general project by the Bureau of Mines to find and develop uses for coal refuse. To make activated carbon for water-purification purposes, only the higher-carbon fractions of the refuse, that is, only the good coal which constitutes a small percentage of the waste, have been utilized. For this reason, the report states, it may prove more economical in most instances to use good coal directly from the mines rather than from the refuse dumps. Activated carbon is now made generally from selected woods and from natural gas.

The Bulletin may be secured free direct from the Bureau of Mines.

Are You So Bad Off After All? Read This!

TOM, THE "SUPERINTENDENT" at Dimesville water works was getting on in the world. He had actually been given three days' leave of absence with pay, so that he could drive 150 miles in his old roadster and attend the water-works convention—a dangerous proceeding, since he would be seeing new equipment and would want it.

He spent his first day coveting about every other piece of equipment on exhibition. Tired out as evening wore on, he found a chair in the lobby of the hotel to rest his bones. The man in the next chair grinned understandingly and remarked, "Kind of tough on the feet, isn't it?"

Tom was delighted to find one with whom he had so much in common—both water-works men, both a bit out of their element, both tired. Inevitably the conversation settled down to business and the troubles of water-works superintendents.

Said Tom, "We have the bare necessities, all right. One pump for general use and an old one as standby and for peak demands. Thank goodness, I have both master-metered!

"Metered? You're sitting pretty! I just pump. I can only guess how much."

"Say! You are out on a limb! How can you figure costs or make your reports? How can you anticipate your peaks? How can you show additional equipment is really needed? For all you know, you are losing a lot of water by main-line leaks!"

"There I am sunk! I just do my best until the public hollers too much. That's how it goes—no hollers, no improvements!"

"Bless my soul!" said Tom. "I sometimes get fed up with my job, but—a two-meter man! I guess I am not so bad off at that!"

—JACK SERVICE, City Editor, Sparling Metrograms.

The new 150,000-gallon ellipsoidal bottom and roof wash-water tank at the filtration plant, Rome, Ga. The tank proper is 38 feet in diameter and 30 feet to the bottom

"TUPPER CAN'T DO ENOUGH FOR THE TRANSIT COMPANY--- IT'S REALLY GETTING THE BOYS TO WORK ON TIME!"

MEN have to *get* to work before they can *go* to work, and public transit is the *one best way* to get your city's expanding manpower to the job.

WHY?

. . . Because a modern transit vehicle, seating 40 to 60 people, uses street space 12 to 15 times as efficiently as the private automobile.*

. . . Because your transit company is organized to handle large numbers of people with speed and with safety: your transit company knows what it has to do and how to do it, and it has had years of experience in doing it.

But, to fulfill most efficiently its vital role of getting defense workers to their jobs, public transit needs *your* help.

Staggering of working hours to smooth traffic peaks, ample loading zones, thoughtfully-planned traffic-control systems, enforcement of traffic regulations—these are just a few of the things which can help public transit accomplish its job of moving people.

As a city official, you help your people every time you help public transit to do its job better. General Electric, Schenectady, N. Y.

*Based on the nationwide city average of 1.75 passengers per automobile.

ENCOURAGE PUBLIC TRANSIT—IT'S THE WAY TO MOVE PEOPLE

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Airport Expansion

City Airport Expanded to Meet Defense Needs

THE MANNER IN WHICH A MUNICIPAL AIRPORT SERVING A SMALL CITY may be prepared quickly for emergency use for national defense is illustrated at Port Angeles, Wash. Originally constructed by WPA and Clallan County authorities a few years ago, the airport is now being improved as a War Department project, considered important to national defense.

Strategically situated on a plane some two miles above Port Angeles, and sufficiently elevated to escape most of the fogs that shroud the straits of Juan de Fuce, less than a mile away, the expanded airport development will be suitable for emergency use by loaded army bombers as well as by other large planes which could not be accommodated easily on the original small field.

Work on the new project began in December, 1940, and includes the construction of additional runways, expansion of the drainage system and construction of runway turn-arounds. A new lighting system consisting of 98 contact lights and 96 range and boundary lights, one illuminated wind tee and ten obstruction lights, is to be installed. Some 80 acres will be cleared and added to the original airport area, and two new runways, 5,200 and 4,400 feet long, will be built in the expansion program. When the project was begun, some years ago, little thought was given to the national defense possibilities of the development. Now, however, the Clallan County Airport takes on a new importance.

Topeka, Kans., Airport Recently Completed

THE PHILLIP BALLARD AIRPORT, a 166-acre tract that can be used as an all-way landing area, has recently been completed at Topeka, Kans., with complete facilities for commercial use and provision for extensions and improvements should the field be needed for military purposes.

In addition to grading and draining the field, the recent work under WPA has included the removal of trees and old buildings at the south end of the field, and the construction of three runways with a 10-inch sledged stone base and a 2-inch asphaltic penetration macadam wearing surface. The runways, each 100 feet wide, include a north-south runway 2,570 feet long, a northwest-southeast runway 2,800 feet long, and a northeast-southwest runway 3,770 feet long with provision for future extension as required.

In addition to the paved runways, there are approximately 530 feet of 50-foot-wide taxi strip and a large paved apron 180 feet by 125 feet connecting the hangar to the runways. The taxi strips and about half of the apron are of the same asphaltic construction as the runways, while the remainder of the apron, immediately adjacent to the hangar, is paved with concrete.

The drainage system is built to remove surface water as well as ground water to eliminate operation hazards caused by ponded water or soft soil adjacent to the runway. The 6-inch tile drains flank the runways and other paving at each side and drain into leaching pits in the coarse gravel formation.

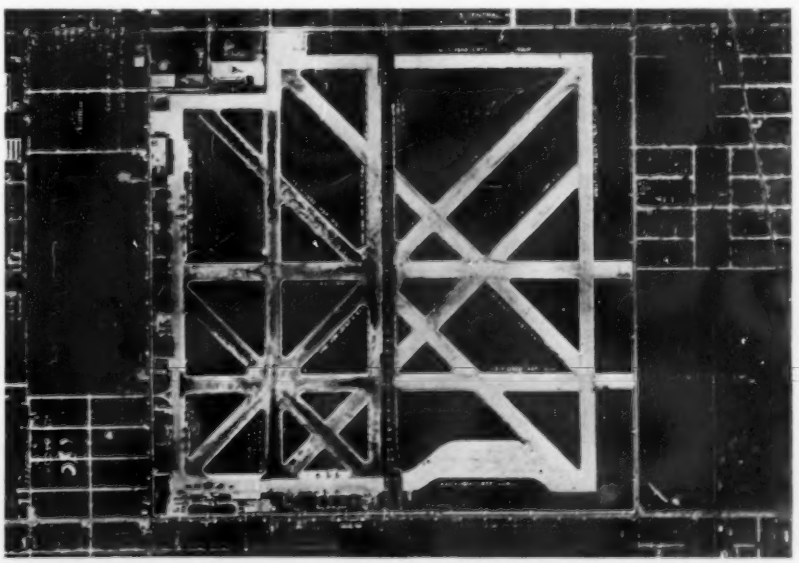
The hangar storage space is 100 by 120 feet with a 100-foot door facing the field and a 50-foot door at the rear to permit quick removal of planes in case of fire. In addition there is a two-story tower on each front corner, furnishing office and storage space and rest rooms for pilots. The hangar is of native stone with a concrete floor and will accommodate twenty of the smaller type planes in common use. A large shop space 25 feet wide runs along the full length of the north side of the hangar.

Chicago's Airport Nears Completion

COMPLETION OF THE $8,000,000 AIRPORT AT CHICAGO, ILL., during the spring of 1941, has been made possible by a recent agreement between the city and the Chicago and Western Indiana Railway, whereby a spur of tracks intersecting the field will be removed and relocated alongside the north end of the airport. The Chicago Department of Public Works has expended approximately $1,000,000, and the balance has been furnished by WPA.

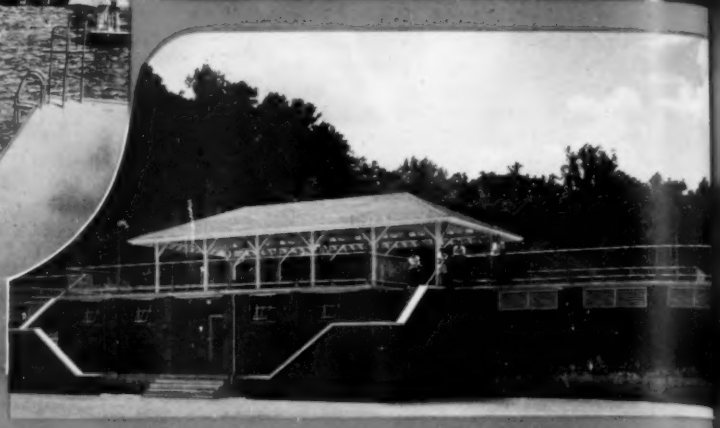
Coincident with the work of removing the railroad tracks, the installation of a new lighting system has been started, consisting of 1,100 field lights of the lead-in, marker and boundary type which will be flush with, and along the edge of a new concrete taxiway. The lights, which will have heavy glass lenses strong enough to withstand the impact of a landing plane, will be installed at 200-foot intervals on both sides of the nine paved runways.

These runways represent a total of nearly 40,000 linear feet, in addition to which there is about 1,800 feet of paved 150-foot taxiways. The nine runways measure 6,534 feet, 6,047 feet, 4,976 feet, 4,908 feet, 4,749 feet, 4,744 feet, 4,650 feet, 4,765 feet and 3,256 feet. One runway is 300 feet wide and the others 175 feet across.



The Chicago Airport, showing the Spur Track which is being removed, releasing eight additional runways for unrestricted use

South Carolina's Largest and Finest Municipal Swimming Pool



THIS modern Swimming Pool, in Cleveland Park, Greenville, S. C., holds slightly more than a half million gallons of water. It is a credit to its sponsors—the Greenville Park and Tree Commission; to its designing engineers—J. E. Sirrine & Company of Greenville; and to its builders—the Works Progress Administration.

Roberts Filters and Recirculating Facilities guarantee the popularity of this Pool by insuring crystal clear and inviting water, as safe bacteriologically as drinking water. Gate receipts to date prove the theory that the popularity of any Public Pool can be reckoned in direct relation to the efficiency of the Recirculating Plant. Bathers will search out *that* Pool in any community which provides *the most inviting water.*

Our Engineering Department, having planned the Recirculating Facilities for hundreds of pools, is at the service of any Architect or Engineer confronted with a problem of Swimming Pool Sanitation. Send us a sketch of the pool you propose to construct and we will respond with a layout of proper Recirculating Facilities to guarantee crystal clear water and resultant *bather popularity.* If you wish it, ask for a plot plan of the Greenville Pool.

Specialists in Water Treatment since the inception of Swimming Pool Recirculation

ROBERTS FILTER MANUFACTURING CO.
600 COLUMBIA AVENUE
DARBY, PENNSYLVANIA

Sewers and Sewage Works

An Interesting Line-up of Four Steel Tanks at the Greater Greenville, S. C., Sewage-Treatment Plant

Array of Steel Tanks at Greenville, S. C., Plant

WHEN ONE SEES FOUR TANKS of various sizes and shapes portrayed in a picture of a sewage works, it is cause for inquiry. Upon seeing the photograph reproduced above, we interviewed C. D. Blackwelder, of J. E. Sirrine & Co., Greenville, S. C., and asked him about the tanks at the Greenville, S. C., sewage-treatment plant.

These tanks have been installed at two different times at the Greater Greenville sewage-treatment plant. Starting at the left, the tall, thin tank was installed in 1928 and is used to store drinking water from the wells which are located in a small house in front of the second tank. The small tank at the left has a capacity of 10,000 gallons. The second tank was installed for raw river water, which is highly polluted, but has been used since 1928 for flushing purposes. A compressor is located in the building behind the second tank and is used to supply air for raising the water into the second steel tank, which has a capacity of 50,000 gallons.

The third tank was installed in 1939 when the sewage-treatment plant was doubled in size, and this tank has a capacity of 150,000 gallons. The water in it is from a new well which is located in a swampy section near the sewage-treatment plant. This water is of fair quality but is still polluted and is used only for flushing purposes. The 150,000-gallon tank which was installed in 1939 is now balanced with the second tank, which at one time was used for raw river water; in other words, the two tanks float on the line. The fourth steel tank is a gas holder of 40,000 cubic feet capacity and is used to store digested sludge gas which is used for the operation of two Cooper-Bessemer gas engines. All these tanks were manufactured and erected by R. D. Cole Mfg. Co., Newnan, Ga.

Municipal Sewer Rentals Upheld by Ohio Court

THE POWER OF THE CITY to shut off water at premises delinquent in sewer-service payments was upheld in a recent decision of the Court of Appeals, Richmond County, Ohio.

In giving the decision favoring the city of Mansfield, Ohio, the Court said, concerning the city's power to discontinue one service for failure to pay for another service, that the sewer and water systems are so closely related as to be considered one transaction, since the operation of the sewer system is dependent upon the water supply; therefore, it is reasonable to shut off water for non-payment of a delinquent sewer-rental bill.

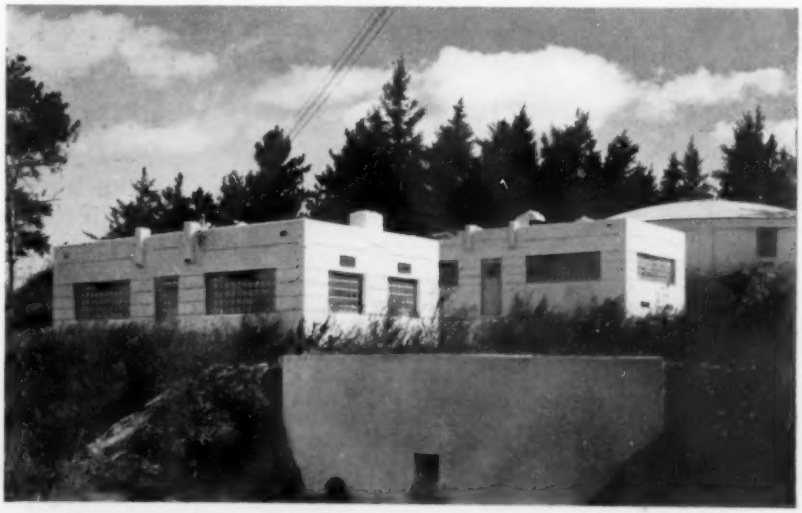
—From APWA News Letter.

Defense Boom Town Rushes New Sewers

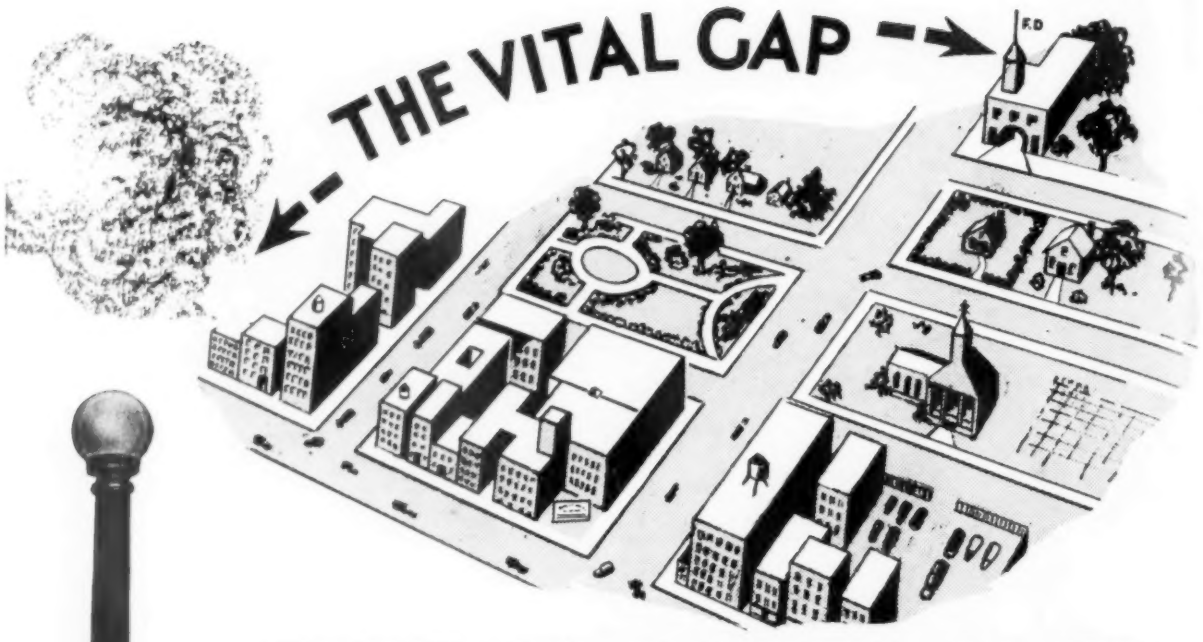
CHARLESTON, IND., HAS BOOMED from a hamlet of 900 to a city of 5,000 almost overnight, as the result of the influx of thousands of workmen engaged to build the giant powder plant there. A project to install a sewerage system and treatment plant was quickly initiated by the local authorities, but, even with two shifts working on the installation, months are necessarily required for the completion of the system. To supply the sanitary facilities pending the completion of the sewers, WPA workmen have built 200 sanitary privies to meet the immediate needs which were especially required by many families living in trailers.

The new sewer system will be adequate for a population of more than 3,000, which is expected to be the population after the new $74,000,000 DuPont powder plant is in operation.

Don't Miss It!
Second Annual Meeting of the Federation of Sewage Works Associations
New York City—October 9, 10, 11



The New Sewage-Treatment Plant at Bagley, Minn., Built at a Cost of $51,535 by Lametti & Lametti, Contractors, St. Paul, Minn., Druar and Milinowski, St. Paul, Minn., Consulting Engineers



BETWEEN THE DISCOVERY OF THE FIRE AND ARRIVAL OF APPARATUS

Can be shortened by installing more and conspicuously located alarm boxes . . .

Seconds and minutes lost in a fruitless search for an alarm box can be the means of a small, easy-controlled fire becoming a major conflagration. Many fires in the beginning can be extinguished with one small stream of water but unchecked have been known to increase 50 times the original size within a few minutes.

Records show that practically every conflagration, and most fires involving the loss of life—and property losses of $1,000.00 or more—have been the results of delayed alarms.

Gamewell surveys indicate that a "Box-a-Block" in congested, high value districts are the minimum of efficiency. In residential districts they should be no fewer than one every 500 ft.

Three-Fold Fire Alarm Box on Type U1000-6 Pedestal

"There is practically no city where there are enough fire alarm boxes."—U. S. Chamber of Commerce. Check the alarm box situation in your community and, if this statement applies, then ask the cooperation of the Gamewell engineers.

Make the Three-Fold Fire Alarm System your city's "first line of defense against Fire!"

THE GAMEWELL COMPANY

NEWTON UPPER FALLS MASSACHUSETTS

Public Safety

Dickerson Urges Lightup Instead of Blackout

THE CREATION OF A CANOPY OF GLARING LIGHTS over a city would afford better protection than a blackout in the event of invasion, says A. F. Dickerson, head of General Electric's illuminating laboratory and an outstanding authority on outdoor lighting.

This could be done by the installation of numerous small though powerful searchlights, pointed upwards and mounted on the roofs of large buildings and atop high elevations. Such a glare of light would tend to blind enemy flyers, prevent them from seeing through the curtain of light and locating vulnerable targets, according to Dickerson.

Such a canopy would also silhouette bombers to the eyes of defending aircraft flying in the sky above the heavy bombers. Such lighting could also be used to decoy enemy pilots by being placed about open fields adjacent to a city, thus extending what would appear the boundaries of the city as viewed from the air.

Nazi pilots now engaged in night raids on London and other large English cities have apparently had little difficulty in finding them in the blackout. Moonlight reflecting from the roof-tops, and from such rivers as the Thames plus parachute flares, have helped the Nazi raiders in locating vulnerable targets. Even without moonlight, such cities as London, Birmingham, and Manchester have a different reflection from that of the surrounding country and therefore can be detected from the air.

The blackouts, plus cloudy and misty atmosphere, have helped the Nazi raiders hide in the night sky, making it difficult for English pilots to find them. The light canopy, however, would serve as a background against which the enemy planes could be seen in silhouette by protecting-aircraft, and driven from the night sky. The lights would illuminate the clouds or fog banks so that they would appear lighter than the enemy planes, whether they appeared above or below the enemy flyer. The lights would also assist the anti-craft defense in detection from the ground.

By installing these small, powerful searchlights not only in the cities but also outside the urban limits in rural areas, the enemy might be decoyed into unloading his bombs on unimportant ground, Mr. Dickerson believes.

Highly Selective Police Radio

THE RADIO EQUIPMENT installed in the village of Riverside, Ill., in November, 1940, consists of a General Electric 25-watt FM station transmitter; one FM station receiver; one station receiver for operation on 1712 kc to monitor the Oak Park and Chicago Police Departments; one headquarters antenna system erected on a four-leg windmill tower 85 feet high, with necessary concentric tube transmission line. The tower is located in the rear of the station.

The mobile equipment consists of a 25-watt transmitter with dynamotor power supply; and a FM model receiver with vibrator power supply. Since its installation, the equipment has developed no operating difficulties. Maywood, located about 4 miles distant, and Park Ridge, about 16 miles distant, operate on the same frequency (31.5 kc), yet the equipment is so selective that when our mobile transmitters are operating, there is no interference from the station or motor transmitter operating simultaneously in Maywood or Park Ridge.

This equipment did not replace a previous installation. It is our first experience with two-way communication. The equipment is used in normal police operations such as patrolling and routine police duties. It has proved very effective in apprehending house breakers, and in motor-vehicle accidents, and recently assisted materially in handling a fire by standing by at the scene of the fire and transmitting the orders for additional assistance and equipment. The village is very well satisfied with the results obtained to date.

G. L. OPPER,
Village Manager, Riverside, Ill.

New York City's Fire Auxiliary

FIRE COMMISSIONER Patrick Walsh estimates that more than 40,000 civilians will soon be trained in New York City as members of the Emergency Fire Auxiliary Corps, a unit of the civil defense program.

Most of the instruction periods will be in the evening, so as not to conflict with the regular work of members.

For training the auxiliary the city has drawn specifications for 660 new pumpers, and 1,000 retired firemen are available.

Big Extension of Fire-Alarm Lines

TO PROVIDE BETTER FIRE PROTECTION throughout the borough of Queens, WPA crews are stringing 32 miles of fire-alarm lines for the New York City Fire Department. At hundreds of sites, tree branches have grown out around the overhead wires, and rubbed against them in wind storms until the insulation was worn off. Nearly 19 miles of signal lines damaged in this manner are being replaced and 25,000 trees are being pruned. In previous projects during the last three years, WPA has added 110 miles of conduit and 820 fire-alarm posts to the borough's system.

Modern Municipal Swim Pool

A CONCRETE municipal bath-house, filter house, and swimming pool, having a capacity of 1,200 bathers a day and an expected daily average of 600 bathers, has been constructed with WPA aid at Decorah, Iowa.

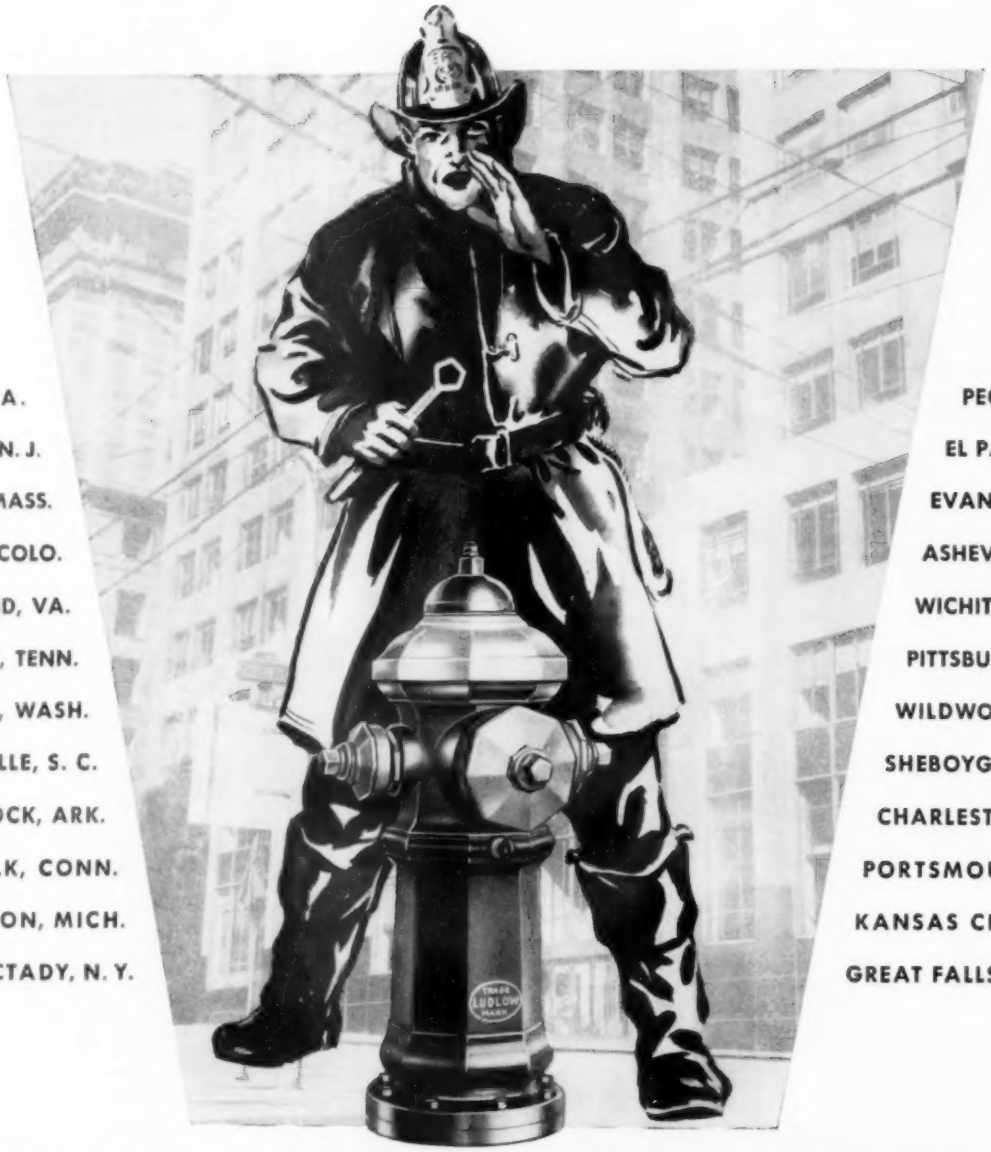
The pool is 165 x 75 feet, with the shallow end at least 3½ feet deep to permit swimming in all parts of the pool. For children, a circular wading pool 60 feet in diameter is provided. The water is 6 inches deep at the edge and 18 inches in the center, with a sand area behind the wading pool. The two pools are separated by a high woven-wire fence.

The water is circulated by ten inlets staggered as to height, with one of

Concrete Bath-House at Decorah, Iowa

them at the deep end under the diving area. Scum gutters are placed 20 feet apart.

Graver filters turn over the water every nine hours, and a pump recirculates it. Adjacent to the filters is a floc chamber. Sterilization is by means of a Wallace & Tiernan chlorinator.

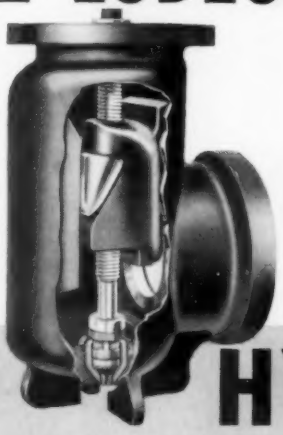


YORK, PA.
BEVERLY, N. J.
LOWELL, MASS.
DENVER, COLO.
RICHMOND, VA.
MEMPHIS, TENN.
TACOMA, WASH.
GREENVILLE, S. C.
LITTLE ROCK, ARK.
NORWALK, CONN.
MUSKEGON, MICH.
SCHENECTADY, N. Y.

PEORIA, ILL.
EL PASO, TEX.
EVANSTON, ILL.
ASHEVILLE, N. C.
WICHITA, KANS.
PITTSBURGH, PA.
WILDWOOD, N. J.
SHEBOYGAN, WIS.
CHARLESTON, S. C.
PORTSMOUTH, VA.
KANSAS CITY, MO.
GREAT FALLS, MONT.

THEY ALL USE LUDLOW HYDRANTS

On Guard in these and other cities, Ludlow Hydrants insure complete security winter and summer, year in and year out. The famous slide gate principle, developed and perfected by Ludlow, provides *quick water* with least possible shock; proper shut-off without water hammer. Drainage at lowest point prevents freezing; wedge locking gate prevents flooding . . . Write for a free copy of Catalog No. 201.



LUDLOW DOUBLE GATE VALVES

One inch or 60 inches, the parallel seat, double disc-type slide gate valve, developed and perfected by Ludlow, has been the universally accepted construction in all water works valves for nearly three-quarters of a century.

LUDLOW HYDRANTS

THE LUDLOW VALVE MANUFACTURING CO., INC. • TROY, N. Y.

Vol. LVI, No. 7 The American City July, 1941

The Service of Flight Strips to Cities and Local Areas

These Auxiliaries to Airports Will Increase in Value and Aid National Defense, Commercial and Private Flying

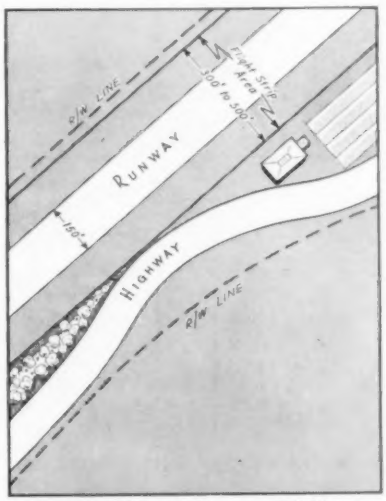
By Theodore Reed Kendall
Engineering Editor, The American City

THE installation of Flight Strips adjacent to state highways as aids to aviation has been advocated by Lieut.-Col. Stedman Shumway Hanks for more than a decade. Best built 200 to 500 feet wide and 1,800 to 8,000 feet long on public lands, they may be constructed with state or county funds with Federal aid to serve as landing fields or auxiliary airports. This original conception has now been almost outgrown with the great needs of national defense and also the impending rapid growth in private flying, both of which make tremendous demands on this type of service.

The detail diagram showing a Flight Strip area and runway adjacent to a highway indicates the possibility of developing a Flight Strip area with some features of roadside development, including parking space and a building for fuel, repairs, refectory and rest rooms, and possibly a picnic ground among the trees.

In National Defense

Air bases and airports are the first targets of bombing operations by enemy planes, for at such points there are usually large concentrations of bombers and fighting planes for defense purposes. At the luncheon of the Aviation Section of the American Road Builders' Association during the annual convention in January, 1941, it was brought out forcibly that great concentrations of planes at one airport are strategically hazardous and that they may better be fueled and stored by squadrons not far distant from the main air base. Thus Flight Strips, properly camouflaged by planting and even with underground facilities, in the future would permit squadrons of bombers and fighter planes to be located near the airports of our major cities.



Typical Flight Strip Area Within a Highway Right-of-Way

Complete servicing and repair facilities must necessarily be located at the air base. Squadrons may be readily flown to the base for these overhauling operations from nearby Flight Strip areas and thus prevent a heavy concentration of planes at one point at any time.

We have assumed two Areas, A and B in the illustrations on page 38, with municipal airports and Flight Strips. If Air Corps units are stationed at the Albermarle Municipal Airport, in an emergency these units would disperse for protection to the Flight Strips as follows: between Albermarle and Burton; between Albermarle and Everest; and between Doolittle and Custom. These Flight Strips will also serve as auxiliary fields for private fliers who store their airplanes at Albermarle, but where the air traffic may be too heavy for comfort owing to the presence of military aircraft and commercial air carriers.

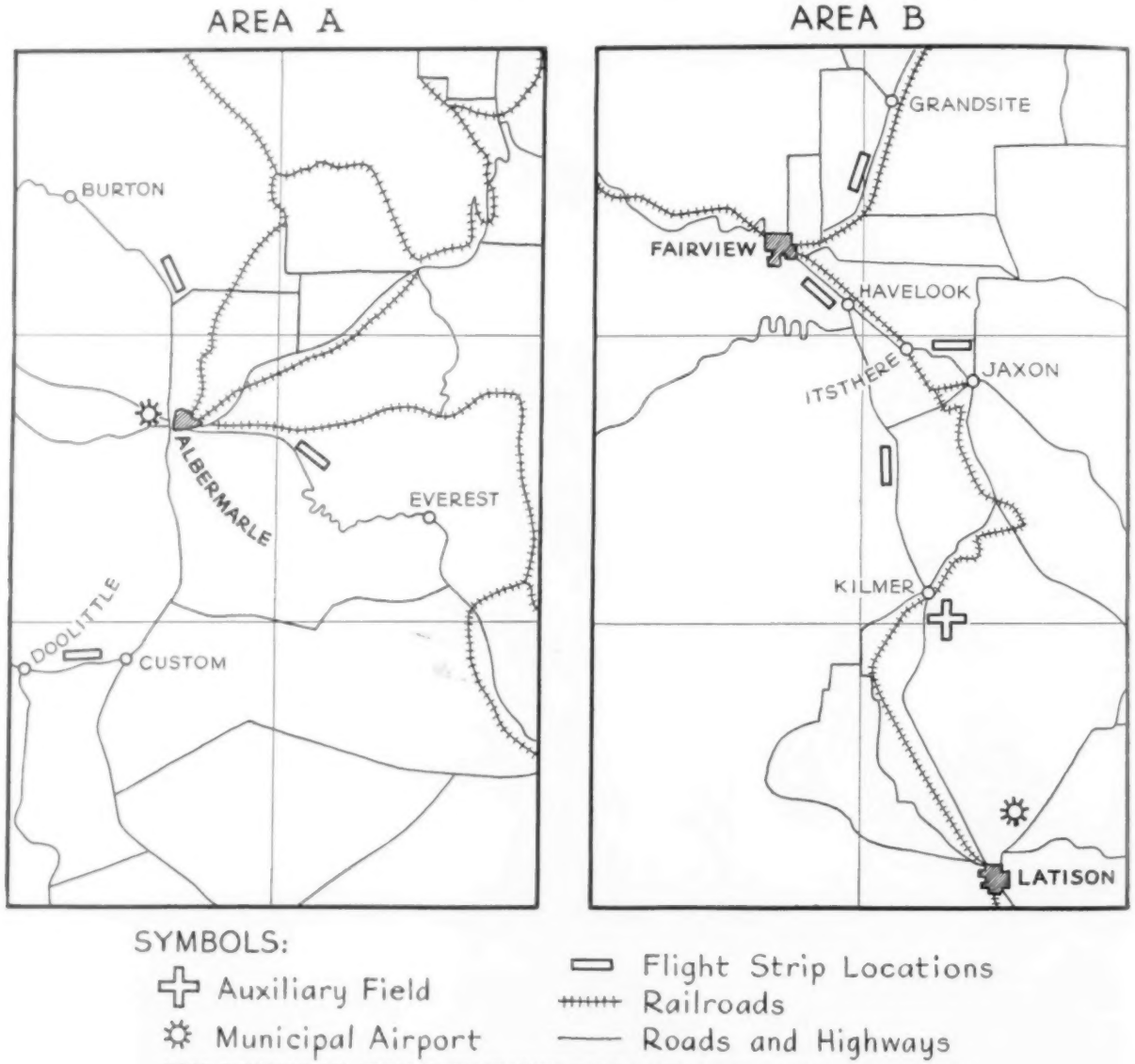
In Area B, if an Air Corps Pursuit Group is to be stationed near Fairview, the headquarters may be at the commercial intermediate field at Kilmer, but each of the three combat squadrons forming the Pursuit Group will occupy one Flight Strip as follows: between Fairview and Itsthere; between Itsthere and Jaxon; and between Fairview and Grandsite. There is a possible good location for an extra Flight Strip on the secondary road between Havelook and Kilmer where air-craft could be pulled off the Flight Strip area with tractors and hidden among the trees.

It should be noted that all seven of the Flight Strips, shown in Areas A and B, which are within easy flight distance of each other, have different compass bearings, so that if there is a cress-wind above 25 miles per hour, a landing in the direction of the wind can be made on some one of the Flight Strips. By developing Flight Strips, as shown above, private fliers are also benefited, as to fly from Latison to Albermarle, the two maps being of contiguous

territory, private fliers have the choice of five different Flight Strips where they may land, and these also may serve as ground facilities for future feeder air mail stops. All these Flight Strips offer the possibility of providing areas adjacent to the highways for the bivouacking of mechanized troop units as ground forces follow up the advance of air units.

For Private Flying

The gigantic strides in the production of flivver planes in the past few months makes it not only a possibility but a probability that as soon as the present conflict is over, the skies will be filled with private planes, because of the relatively low price of the machine itself and the remarkably low cost of less than two minutes of each other on the main runways of airports, and one can well imagine the flock of private planes which would be heading for home toward dusk in the not-distant future on a week-end. Six or a dozen Flight Strips adjacent to a large city will prove invaluable in providing the landing and storage areas for the private plane of the future.



TWO CONTIGUOUS AREAS WITH FLIGHT STRIPS AND OTHER AVIATION SERVICES
Their uses are described in this text

Under no conditions should highways themselves be used for the landing and take-off of planes, for this would completely disrupt essential orderly highway transportation. Such chaos would be deeply gratifying to an enemy attacking this country.

operation. Safety devices making such planes easy to fly and as easy to land is creating a very large body of air-minded citizens who must have some place to land and take off. It is here that the Flight Strip is again of greatest importance, because planes should not land within

The Small Community

It has already been shown that airports are expensive to maintain, with their ever-increasing areas and longer runways. Many cities are demanding more and more aid from the Federal Government be-

cause they realize that the large airport is not a local proposition but is largely devoted to inter-state flying. Cities feel that they are overburdened in the maintenance of these airports, and some officials have even expressed the desire to unload the airport on some other agency because of the hole it makes in the municipal budget.

The small community cannot afford to maintain an adequate airport with runways long enough for even the smaller of the transport planes. Such communities can, however, maintain Flight Strips adjacent to state or county highways in their communities, and thus have available the necessary landing facilities at minimum cost to the individual community.

Such communities will be performing an inestimable service to air-minded individuals in their own community, and at the same time will be serving aviation throughout the nation by providing auxiliary landing areas for commercial and military planes. All that is necessary is to acquire additional right-of-way adjacent to a state or county highway, grade and drain the area. The surface of the runway on the Flight Strip area, whether paved or sod, should have adequate bearing to permit safe landings and take-offs of our largest commercial and military planes. Full cooperation is offered by the Federal Government, and complete information may be secured from the American Road Builders' Association, International Building, Washington, D. C., or from Thomas H. MacDonald, Commissioner, Public Roads Administration, 515 Fourteenth Street, N. W., Washington, D. C.

Clean Streets Assured Summer and Winter

University City, Mo., Uses Pick-Up Sweeper and Truck: Fast Plowing, Salt and Cinders for Winter Snows

UNIVERSITY CITY is essentially a residential community, largely with one-family houses, which makes it essential that the streets be maintained in a cleanly condition. There is a total of 80 miles of public and private streets in the city, 60 miles of which is public streets, and 45 miles of these are paved with curb and gutter, making them readily cleaned with the Elgin pick-up sweeper.

The loop, or business streets, are cleaned daily and the residential streets weekly. The city does not clean the streets in private subdivisions unless specifically requested. The alleys throughout the city are cleaned every three weeks.

One of the municipally owned rubbish trucks picks up the material deposited by the sweeper when its hopper is filled. An extra man on this truck helps sweep up the piles when loading into the truck.

The cost of operation and maintenance of the pick-up sweeper for the fiscal year 1939-40 was $2,700 for operation and $2,100 for maintenance, including broom replacement.

Snow and Ice Problems

When snow visits University City and is of sufficient depth to require immediate removal, all departments work together under the direction of the Superintendent of Streets. The city owns two plows, a Good Roads reversible blade plow which is attached to a 1½-ton GMC truck, and an Austin-Western blade plow which is mounted on the double reduction Diamond T 3½-ton truck. The snow is plowed to the gutter throughout the city and is picked up and removed around churches and through the business section by hand labor. It is disposed of by dumping through manholes into the River des Peres 20 x 26-foot storm sewer.

A total of four horse-drawn sidewalk plows are sent out whenever the snow is more than 3 or 4 inches in depth. These plows clear 100 miles of sidewalk on the 50 miles of street where public plowing is required. A maximum of 12 hours is required for plowing all sidewalks.

Ice storms are not of frequent occurrence in University City, so it does not pay to pre-mix the rock salt and cinders which are used for covering all intersections, hills and curves on main streets, followed up by the secondary streets. The salt is mixed with the cinders as the trucks are being loaded, and then the material is applied by hand, using four men on the truck hand-casting the cinders and salt out over the roadway. As many as six trucks are put out in this work to cover the city as quickly as possible.

A very interesting bit of psychology has come out of the ice-control operations in University City as both limestone chats and cinders have been used for "sanding." It is felt that the limestone chats perhaps do a slightly better job than the cinders, which grind up rather quickly under traffic. However, automobile drivers do not see the limestone chats on the white ice, while the cinders do show up, and fewer complaints are received of failure to "sand" when the cinders, which incidentally are cheaper than the limestone chats, are used.

Street cleaning in University City is done under the direction of R. L. Lefmann, Supervisor of Sanitation, Health Department, while street maintenance, including ice control, is under the direction of Walter A. Heimbuecher, City Engineer, with James J. Leahy, Superintendent of Streets, in charge.

Construction Town Proves Value of Far-Sighted Planning

By HARRY W. BASHORE

Assistant Commissioner, Bureau of Reclamation, Department of the Interior, Washington, D. C.

BUILT to house the thousands of workmen and Government engineers who were constructing Boulder Dam on the Colorado River, Boulder City in Nevada seemed almost miraculously created: in the fall of 1931 it was an engineer's tent on an untracked desert mesa; a year later nearly a thousand dwellings with modern facilities sheltered the inhabitants. At the peak of construction of the project, in 1933-34, the population reached more than 6,000; today, with the dam complete, there are still from 2,500 to 3,000 citizens.

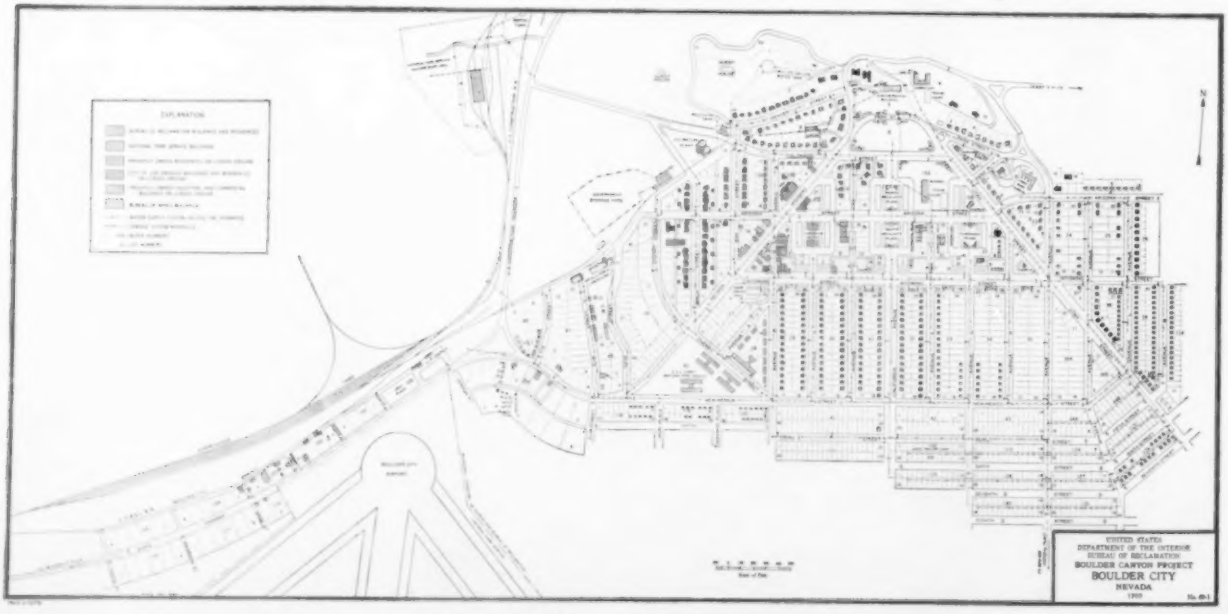
On land 2,500 feet above sea-level, in the middle of the Boulder Canyon Project Federal Reservation, which is about a dozen square miles, Boulder City was built 7 miles from the dam and reservoir, and 24 miles from Las Vegas, the nearest town of any size. It was designed by S. R. DeBoer, city planner and landscape architect, of Denver, Colo., to create for the Government conditions of health, comfort and sanitation that would, so far as possible, counterbalance the hot winds and the glaring sun which sometimes raised the temperature to 100 degrees in the shade. This being a Federal community, gambling, drinking and vice were strictly banned. The authority of Sims Ely, City Manager, over the life of the city was adequate. The result: a model Government town, with a fine reputation, well-kept, attractive buildings, clean boulevards.

The Government originally laid out the city, surfaced the streets, installed the sewers, and built administrative and municipal buildings. It also bore the expense of administration, and was partially recompensed by the income from leases and permits. There have been two periods of development since the initial construction a decade ago; the first covered active construction during the building of the dam, from 1931 to 1935; the second, following completion of the dam, is now going on. Most of the construction contractors' temporary buildings and employees' houses are being removed.

Public and Private Buildings

Originally the construction contractor (Six Companies, Inc., Oakland, Calif.) built more than 600 houses, 9 large dormitories, a mess hall, a recreation hall, a department store, a hospital and other buildings. Upon completion of the contract 129 three-room and 35 two-room cottages were sold to local residents; three of the big dormitories were bought by the War Department for use as a CCC camp; the directors' lodge, 12 officials' residences, office building and office dormitory were purchased by the Bureau of Power and Light of Los Angeles for use by their operating forces; the hospital was purchased by the National Park Service for administrative offices and a museum, and the garage was sold to the Bureau of Mines to be remodeled into a metallurgical laboratory. Since the completion of the dam nearly $1,000,000 has been spent in the construction of new homes, offices, new stores and additions to others, and an airport and airport facilities.

The original plan, which envisioned an efficient urban zoned community, was carried out. Government buildings were of solidly constructed Spanish architecture.



Map of Boulder City, Nevada, in 1940

Panorama of Boulder City, Nevada

All main buildings were air-conditioned. During the two-year period following the completion of Boulder Dam, the future residential requirements in Boulder City were too uncertain to foster construction of homes by private individuals. Since 1937, however, the future possibilities have become more apparent, and the rate of construction of private homes has steadily increased. Single residences and duplex units have been built by private individuals ranging in cost from $1,000 to $23,500. A first-class building housing a hardware store and nine modern apartments was constructed at a cost of $42,000.

The city's only department store was remodeled and considerably enlarged during 1939, and other business buildings have been improved to suit the changing needs of the community. The Community Church has added to its existing building a structure valued at about $12,000, which houses four additional Sunday School rooms, a pastor's study, and a six-room manse. The granting of 53-year leases for the construction of homes in Boulder City has recently been approved, which makes it possible to obtain FHA insured loans.

Development by Government agencies has been considerable in the city. The Bureau of Reclamation constructed a trailer camp in one of the blocks vacated by the contractor, and rest rooms, showers, and electrical convenience outlets were provided in the camp. A high-school building is nearing completion, which, complete with equipment, will cost about $90,000. It includes gymnasium, stage, dressing rooms, rest rooms, showers, and five classrooms, and will provide a complete high school for Boulder City, beginning in September, 1941. The eleventh grade is being taught in the local schools this year for the first time.

Public Utilities

Water Supply. — To obtain acceptable water for domestic use, it was necessary to remove silt from the river-water, soften it to approximately 100 parts per million of hardness, aerate it, and treat it chemically to destroy harmful bacteria. Pumping plants lift Colorado River water 2,025 feet to a presedimentation basin, and then to a receiving tank, whence it flows by gravity to a filtration plant, where it is pumped finally to a storage tank or distribution lines covering the entire city. All mains are in loops without dead ends. There are two 12-inch cast-iron mains from the main storage tank. Cast iron mains, 4 to 10 inches in diameter, branch from the main supply lines in each intersecting street. Service connections from mains to consumers are ¾″ to 1½″ copper tubing.

There are 89 fire hydrants and 2-inch and 4-inch fire protection standpipes in dormitories and public buildings. The static pressure for the distribution system varies from 90 feet in the buildings at the north side of town to 220 feet at the south, the average being 160 feet, or nearly 70 pounds per square inch. All water used in Boulder City is on a metered service. The cost of the supply, treating and distribution system totaled approximately $500,000.

Sewer System. — The lines of the sewer system are laid in conjunction with the water-distribution system. Service lines of 4-inch to 6-inch diameter lead to 6-inch and 10-inch mains, and thence by 12-inch outfall to a sewage-disposal plant at the head of a ravine one-half mile southeast of the town. All sewer mains and laterals are of vitrified tile. Cast iron soil pipes lead from service outside the house foundations to plumbing fixtures.

The sewage-disposal plant is of the separate sludge digestion type and is designed to afford primary treatment for an average flow of 1,500,000 gallons

The Administration Building in Boulder City

a day. The structure consists principally of reinforced concrete tanks and chambers, constructed mainly below the ground surface, including a 30-foot clarifier tank of 8-foot side-water depth, a digester tank 24 feet square of 13-foot side-water depth, and a chamber containing a sludge pump and heating apparatus, all combined in a monolithic reinforced-concrete unit approximately 45 by 61 feet in plan.

A one-story brick building, 27 by 38 feet in plan, has been built over the digester tank, sludge pump and heating chamber. The roof of the building is of timber construction covered with asphalt composition shingles laid over one layer of asphalt-saturated felt roofing. The concrete roof of the digester tank is supported by structural steel trusses that also partially support the roof of the building.

The plant equipment includes a Dorr clarifier equipped with a scum skimmer, a sludge pump, a Dorr digester tank mechanism, a gas-fired boiler, and a circulation pump, together with the piping system, valves, fitting and specials, electric motors, and operating mechanism.

The raw sewage enters the plant through bar screens of 1-inch openings, to remove the larger particles of indigestible foreign matter from the flow. It is then introduced into the clarifier tank for a subsidence period of two hours at maximum rate of flow to allow the suspended solids to settle to the tank bottom as sludge. Approximately 97 per cent of the suspended solids are removed in this tank.

Power and Light Plant. — Operation and maintenance of the generating units in the Boulder Dam power plant is done by the Bureau of Power and Light of Los Angeles and the Southern California Edison Co. Since 1936 the Bureau of Power and Light has spent about $500,000 for improvements in Boulder City. This amount was used as follows: office, warehouse, and garage building, $82,000; 27 new residences, $221,849; 5 duplex units (now under construction), $80,000; 14 garages, $8,120; and improvements to residences purchased from contractors, home furnishings, air-conditioning equipment, landscaping, and other betterments, approximately $100,000.

The Bureau of Mines, early in 1936, purchased the Six Companies' garage building to house a plant for developing methods for the electrometallurgical application of Boulder Dam power and the utilization of raw materials from the Boulder Dam area. New methods of handling the reduction of manganese ore and others have been worked out in their laboratories. With the present defense need for manganese, it is desirable to place these new methods on a commercial basis, and to do this the Bureau of Mines is constructing in Boulder City a pilot manganese plant at an approximate cost of $1,000,000.

The Boulder City Airport, one of the city's finest improvements, is being constructed by the National Park Service. The airport facilities include an attractive passenger depot, a hangar, and a service station constructed at a cost of about $48,000.

The Navy Department has just completed a land plane hangar and gasoline fueling facilities adjacent to the airport, at a cost of $63,000. These facilities will be used by Navy planes on training flights from the Pacific coast and on cross-country flights.

Boulder City's original plan of government, still in effect, was simple. The City Manager was responsible to the Construction Engineer of the Bureau of Reclamation. (Today the Acting Manager—Mr. Ely having retired—is responsible to the Director of Power, appointed by the Secretary of the Interior.) The police force consisted of deputy United States marshals. The fire department was volunteer and operated from a Government garage. All real estate was owned by the Government. Land and buildings were leased and the rentals collected by the City Manager. Business permits were issued as required in the public interest.

Homes in Boulder City

A Mayor Looks at Public Housing and at Defense Needs

By CORNELIUS D. SCULLY
Mayor of the City of Pittsburgh, Pa.

AS I have walked around our Bedford Dwellings and our great Terrace Village projects and talked to the tenants, I have learned what they think of low-rent housing. And I have read my mail, and scanned the applications for admission to the housing projects, and have heard the pleas of residents of areas which have not yet received housing projects—and I can safely say that the great majority of the people of Pittsburgh want a housing program, and want it very badly.

The Chamber of Commerce has enthusiastically supported public housing. So have our very conservative newspapers. Real estate interests have taken public housing in their stride, with none of the uproar about "socialization" and "the undermining of free enterprise" which has marked anti-housing campaigns in other cities.

The City Council has been unanimous in its support of any measures designed to assist the housing program. Our local Housing Authority is a representative body composed of tactful, able, and businesslike men, and it has functioned in complete harmony not only with the administration which created it, but with the community as a whole and with the groups—labor, racial, religious, and civic—into which the community divides.

No one has been able to doubt the need for new housing in Pittsburgh since 1934, when a survey showed that 40 per cent of the city's dwelling units were either in sore need of major repair or else utterly unfit for human habitation.

That much granted, the people of Pittsburgh have welcomed every effort to raise the housing level and provide more homes; and with the construction of 3,073 low-rent dwelling units, the allocation of funds for another 842, and the designation of the city as recipient for 1,000 defense homes, our enthusiasm has increased.

Definitely we can say that Pittsburgh has looked on public housing and found it good.

The city's complaint today might be that there is not enough of it.

We need to build a great many more homes; we must somehow buck the high land costs of congested slum areas; we must do ten times as much as we have done or now propose to do before we can say that we have rid Pittsburgh of the blight of slums.

Since the start of the housing program in June, 1938, we have torn down or repaired more than 2,000 unsafe and insanitary dwellings in the city of Pittsburgh: that is a large number but it is nowhere near enough.

Only on the day when the last slum dwelling goes down, and the sun's cleansing light shines down on the rubble of the last tenement —only on that day can we say that this democracy of ours has done its job and done it surpassing well.

The Metropolitan Area Problem

Acute housing shortages have already arisen in certain areas close about the mills. Various industrial suburbs, together with certain industrial areas in the city proper, have felt the pinch badly, and to these have been allocated 5,000 defense housing dwelling units.

An old bugaboo of housing in the Pittsburgh metropolitan area has raised its head again. That is our governmental structure, which divides the area outside the city into a multiplicity of boroughs, townships, and third-class cities, some of them so limited in area and so congested that it is impossible to find housing sites within them.

When sites are selected in an adjoining municipality, the authorities and townsfolk of that borough or township often scream to high heaven in anguished protest because they fear the political, governmental, and economic upsets which will follow upon a major change in their municipality's population.

Fortunately, the defense housing authorities are endowed with the power to proceed regardless, and so this previous stumbling block for the USHA program will be overcome, I trust, in the present instance.

I realize that Pittsburgh is not the only city in the country which is surrounded by satellite communities, very jealous of their independence and very anxious to preserve their present privileges. In conversation with the Mayors of other cities, I find that the condition is the rule rather than the exception.

There is no doubt in my mind that some answer to this form of local government by "fragment" must be found, if public housing is to succeed in areas outside the governmental limits of our large and medium-size cities. Few boroughs of less than 20,000 people, or townships of even lesser size, will willingly accept the readjustment in taxation, in school support, in municipal facilities, and in general politics and economics, that major low-rent housing entails in such a limited community.

It is comparatively easy for a larger city to accept the changes in tax bases, and the extension of municipal facilities which low-rent housing necessitates; it is much harder—if not impossible—for a small, one-industry borough to do the same thing.

The situation indicates to me another pressing argument for a major reshuffling of governmental powers in this country to the end that in local government the political boundaries of our cities be made coextensive with the economic boun-

daries of the area which they dominate.

Local Defense Council Cooperates

To deal with all the problems of housing as developed by defense, we are setting up a special committee of our local defense council. This committee will soon be at work, and one of its first problems will be the development of a housing registry. We expect this service to tell us many things about our own housing situation which we do not now know, and to guide us in the future by the day-to-day changes which it should reveal.

Its task will be the collection and the maintenance of an up-to-the-minute index of the total demand for vacant dwelling accommodations and the total supply.

It will help move employees now traveling excessive distances closer to their work; it will guide families able to purchase homes to the FHA or other helpful agencies; it will list all housing vacancies and, we believe, bring into the rental market housing facilities now unused.

We hope to make the best use possible of Federal defense and low-rent housing funds, to stimulate home modernization, and to encourage private housing construction.

In this connection we believe that the advice of citizens' committees, working with the defense council, will prove of very real value. The well-chosen, well-directed citizen committees, cooperating with our Housing Authority in the fields of tenant selection and in social planning, have been of major service to the whole housing program.

The city is also ready to cooperate with any policy of rent control which may be enunciated by the price-fixing division of the OPM. We understand that this important problem is being carefully studied, and certainly it appears only just that if the price of steel, of automobiles, of gasoline, and the other commodities which we use in our daily life are to be fixed, then the price of housing should not be allowed to soar to excessive heights.

Pittsburgh is ready to make any sacrifices the national emergency requires, and we realize that in a crisis it is needful that you conquer the crisis first and think of long-range planning afterward. But we think it would be foolish to neglect permanent improvements in our housing picture provided that these can be gained with nothing lost to the defense effort.

We have many problems to face, zoning, planning, decentralization, municipal finance—and, everything being equal, we should like to solve our defense housing problems in the manner best adapted toward the solution of all these other things.

But we know that we are up against the gun in this country. We are for all-out defense, and that comes first. If America loses in this grim struggle between dictatorship and democracy, between tyranny and freedom, between darkness and light, then all our social gains will avail us not.

Let's keep forging ahead if we can, but, if I can speak for Pittsburgh, I am sure that our city is ready to throw the business-as-usual sign on the scrap heap for the duration of this emergency.

—From an address by Mayor Scully before the National Committee on the Housing Emergency, in convention at Washington, D. C., June 12, 1941.

"FENCED IN"

"A DIFFERENT STORY"

These photographs, by Glenn Tyson, won Honorable Mention in the contest conducted by the Pittsburgh Housing Association

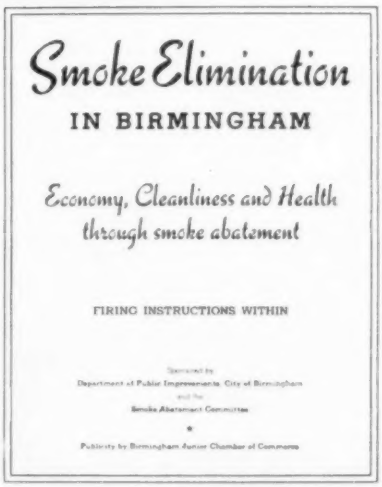
Industries and Homes Combine for a Smokeless Birmingham

Educational Campaign a Great Success, with the Might of Law Ready When Needed

Birmingham progressed from smoky days through education

DEFINITE results, particularly in the installation of improved heating equipment in industrial and commercial plants, have been accomplished during the first year of a city-wide smoke abatement campaign in Birmingham, Ala. "Smoke consciousness" has been developed in the city, and the sale of coal stokers to both domestic and industrial users has increased more than 200 per cent. The stoker is a recognized mechanism for eliminating smoke where soft coal is used as a fuel.

Birmingham was able in its drive to take advantage of much of the experience in St. Louis, Pittsburgh and other cities in similar campaigns, but the first move was to enlist the cooperation of the various agencies in the city in order to make it a success. A city-wide committee was appointed, with E. E. Michaels, President of the Engineers Club, as chairman, and with representatives from various agencies, including the Alabama Mining Institute, the Parent-Teacher Association, the Junior Chamber of Commerce, the architects, the railroads, the real estate agents, the Health Department and the city as members. With the advice and counsel of this committee, the actual work is carried on under Commissioner of Public Improvements James W. Morgan and with Thomas W. Langford as smoke inspector.



The work has been entirely educational so far, and in this the active cooperation of newspapers and other mediums of publicity was enlisted. Commissioner Morgan took pains to point out that no effort was being made to make the public change from the use of coal (or coke) to the so-called smokeless fuels such as gas or oil. Birmingham, he emphasized, is in the heart of a bituminous mining district, and it would be foolish to try to "coerce people into using foreign fuels."

A Bad Situation

But the fact that Birmingham uses soft coal largely and is situated in Jones Valley between two mountain ranges helps to intensify the "smog situation." During the heating months, especially on those mornings when the atmosphere is still, the city is shrouded in a pea-soupy fog until late in the morning.

With such a condition prevailing, it was not hard to stir up enormous

to bright, clear, smokeless days like this

public interest in the campaign. The health impairment of so much smoke was argued back and forth in the newspapers, not to mention the increased danger of traffic accidents and the high cost of keeping clothes cleaned, houses painted, etc. The newspapers almost daily published pictures of familiar downtown scenes enveloped in smoke and fog. Even then a few insisted the condition was no worse than in other industrial cities of similar size.

With all the spotlight being given to smoke, owners of some of the larger plants where smoke belched forth continuously from their stacks found themselves in effect on "the spot." Aside from improving the firing efficiency of their plants, they soon realized the opportunity for a stroke of good-will by installing improved firing equipment.

Improvements Begin

The first major move in this direction was made by the Birmingham Electric Co., which operates a big downtown plant to supply steam for heating purposes to the central city area. This plant has six 600-hp boilers with chain grate furnaces. They were equipped with automatic blowers to supply additional air over the fire-bed, which causes more complete combustion, eliminating high stack losses and smoke. This installation was praised by Commissioner Morgan as "the first big example of just what can be done to abate smoke in the city."

In other plants where it was not possible or feasible to install stokers, equipment for better over-fire ventilation was found adequate. In several of the laundries and dry cleaners over-fire steam jets were installed. The steam creates a vacuum and helps to suck in the air necessary for complete combustion of the volatiles in the coal. The county court-house, which uses coal pulverizers, found also that the installation of air vents over the fire-beds eliminated smoke.

In still other plants the answer to the smoke elimination problem was found in the use of a chemically treated coal. This was the case at the $5,000,000 Elyton Housing Project, which operates its own heating plant. Daniel W. Bateman, technical adviser of the Birmingham Housing Authority, in a letter to Commissioner Morgan reported that the Authority was eliminating smoke and saving 10.4 per cent in fuel by using a treated coal.

Results of a test run made by the Housing Authority with untreated and treated coal were reported by him as follows:

"4,210 pounds of untreated coal was consumed over a period of 24 hours, which evaporated 36,437 pounds of water at 183 degrees Fahrenheit, with an ash and clinker residue of 263 pounds.

"4,210 pounds of chemically treated coal was consumed over a period of 24 hours, which evaporated 40,250 pounds of water at 183 degrees Fahrenheit, with a residue of ash and clinkers of 156 pounds.

"An analysis of these two results will show that 10.4 per cent more water was evaporated by the use of treated coal, which of course would give that much more steam, or, in other words, would reduce the fuel required to 10.4 per cent.

"This Authority, as a result of this test, has instructed the contractor furnishing coal to treat all our coal in the future, as the additional cost for the chemically treated is considerably less than the 10.4 per cent saving in fuel consumption.

"We know that the use of this chemically treated coal will practically eliminate the smoke nuisance which you would normally get from a heating plant of this size."

Education in the Home

While smoke elimination in these bigger plants was receiving considerable publicity, an increscent campaign to improve hand firing methods among home owners was carried on. Pamphlets on best methods of firing a furnace were distributed to thousands of persons, and Commissioner Morgan declared that 50 per cent of the smoke could be eliminated by care in this respect. The pamphlet in effect recommended a reverse of usual methods of building a fire: that is, the coal should be placed on the bottom of the fire-box and the wood on top, to assure plenty of ventilation.

The smoke abatement inspector conducted several schools for firemen and others, visited 5,530 homes, 62 apartment houses, 104 plants, 7 schools and 8 hotels during the first few months of the campaign. He carried parties through plants where improved firing equipment had been installed.

The city has an old ordinance which authorizes the arrest of heating-plant owners who permit smoke of more than a maximum intensity to emerge from their stacks for more than six minutes each hour. Thirty minutes is allowed for starting a fire. No arrests have been made under this ordinance as yet, but it is the intent of the city to enforce it after the first or educational phase of the campaign ends.

Certified Plants

In addition, a committee composed of Chairman Michaels of the smoke abatement committee and E. W. Stanford, architect member of the committee, are working on an amendment to the city building code which will require municipal approval of heating plants that are to be installed in new buildings in the future. The city would then make sure that such heating equipment is of the smokeless variety.

"We have really just begun with our campaign," said Commissioner Morgan. "We know from a study of the experience of other cities that it will take years to accomplish the results that we want. Our program is essentially one of education in the use of coal that we have in our immediate vicinity. Actual demonstrations have shown us that soft coal can be burned with very little smoke. In many cases, however, this involves the installation of improved firing equipment, and this will be done gradually. A number of plant owners have informed me that installations of stokers or other equipment will be made this summer, when the plants can be shut down for the required time."

Pittsburgh Housing Photographic Contest

To produce a documentary record of both good and bad low-rental housing, the Pittsburgh Housing Association sponsored a Photo Contest in 1940. The results show a wide variety of conditions—crowded streets and courts, inadequate facilities, sunless yards, makeshift dwellings, and some acceptable simple houses with light, air, and sound construction.

Over 140 excellent photographs were entered in the contest. Prizes were awarded as follows: First ($30), to E. G. Dieckmann; Second ($20), to William A. Stark; Third ($10), to J. G. Weihs; Honorable Mention ($5), to Frank J. Harano, William A. Stark, Glenn Tyson (see p. 44 for reproductions of his two photographs), E. B. Olds, James T. Mander, Jr., E. B. Olds, J. G. Weihs.

The winning photographs were published in the *Pittsburgh Press*, and have become part of a permanent housing collection of the Carnegie Library and the Pittsburgh Housing Association.

Fifty Years of Paving in Toledo

Street Surfacing Has Progressed from Plank to Brick as the Art and Science of Paving Improved

By JOHN JEWHURST
Service Director,
Toledo, Ohio

PREVIOUS to 1883, all street improvements in Toledo consisted of plank roads, boulders, cedar block, medina block and turnpike. The first brick pavement of record in Toledo was constructed in 1883. In that year a section of Pinewood Avenue was so paved on a sand foundation over a graded earth subgrade. Two years later, Wabash Avenue was improved with the same type of construction. Both of these streets are located in what was then known as the Downtown District. Until 1890, however, the older types of construction, especially medina block and turnpike, were used.

Paving with brick received general recognition in Toledo about 1890, when several streets, principally main thoroughfares, were paved. During the next decade, with few exceptions, all street improvements were of a brick surface type. The records show that the only foundation used for these old-timers consisted of a layer of sand, presumably to take up depressions in the subgrade, and to provide a bedding course. The joints were filled with sand. Some of these pavements, although uneven and rough, are still in use today with the original surface.

Avondale Avenue is an example of progress in foundation construction under brick pavement. This street is paved with brick for its entire length, a distance of approximately 2 miles. The first two sections, built in 1891 and 1900, had a sand base; the third section, laid in 1903, was constructed on broken stone; a section put down in 1910 was on a 4-inch concrete base; another section in 1923 used a 6-inch concrete base; and the last section, installed in 1930, was placed on a 7-inch concrete foundation.

In 1939, East Broadway, Toledo, Was Paved with 3-Inch Vertical Fiber Lug Brick, Asphalt Filler, Slag Cushion

Summit Street, Toledo, Was Paved in 1930 with Wire Cut Lug Brick

Real competition in the paving industry developed about 1900, and since that date, nearly every type of pavement has been given an opportunity to prove its value in the city of Toledo. Some types were successful, while others turned out to be almost complete failures. The city's records include various types of sheet asphalt, Bitulithic, bituminous concrete, bituminous macadam, Amiesite, rock asphalt Westrumite, creosoted wood block, asphalt block, medina block, Durax, plain and reinforced concrete, as well as vitrified brick. Since 1933, five years after the author entered the service of the city of Toledo, service material has been limited to brick, concrete and asphalt street improvements within the city limits.

Previous to 1933, all city pavements were constructed under contract, and since 1928, approximately 550,000 square yards of brick pavement has been built in this manner. This yardage does not include brick pavements built by Lucas County or the state of

Ohio, in areas adjacent to Toledo and later annexed to the city.

Brick-Turning Projects

In 1933, when the Federal Government created the CWA, which later became the FERA and is now the WPA, the City Engineering Division was faced with the problem of developing quickly a number of work projects which would provide jobs for thousands of unemployed. The search for street-improvement projects led directly to brick pavements, and late in that year an extensive brick-turning program was started. In fact, I believe that the city of Toledo was among the first cities in the state to undertake such a program.

The first brick-turning project, started in 1933, totaled about 140,000 square yards and provided for removing and relaying the existing brick surface on a reconditioned cushion course. With a gradual improvement in the quality of workmanship, the work has been expanded to the extent that at the present time a brick-turning project provides for a complete overhauling of the entire pavement, including curbing, drainage and repair of the foundation. To date, over 1,000,000 square yards of old brick pavements have been rehabilitated, with approximately 55 per cent of the original brick salvaged. Although a large portion of the work was performed during the winter months, the results in general have been very satisfactory.

In addition to brick-turning projects, several major thoroughfares have been repaved with entirely new construction, including new concrete foundation and surface. Since 1934, approximately 350,000 square yards of new brick surface have been installed. In connection with this work, the bricks from the streets originally paved with brick were salvaged for future use on brick-turning projects.

During the past eight years, all street improvements within the city of Toledo have been accomplished through the cooperation of WPA. The city, faced with an increasing sponsor's contribution to WPA projects, has been forced to appeal to the State Department of Highways, and Lucas County, for aid in improving pavements on state routes through the city. The assistance granted has been helpful in the expansion and continuance of the city's street-improvement program.

The Record

On January 1, 1941, the records of the Engineering Division of the city of Toledo showed a total of 478 miles of paved streets within the city limits, divided as follows: 161 miles of brick pavements; 175 miles of various types of asphalt pavements; 103 miles of concrete pavements, including alleys; 23 miles of asphalt block pavements; and 16 miles of pavements of miscellaneous types.

—From a paper presented before the annual convention of the National Paving Brick Association.

New Attack Proposed on Urban Blight

A LONG-RANGE program for the rehabilitation of American cities, involving the cooperation of national, state, and local agencies, was submitted to the Board of Directors of the American Institute of Architects, in session in the Yosemite Valley last month, by Dean Walter R. MacCornack of the Massachusetts Institute of Technology, Vice-President of the Institute.

It is proposed [said Dean MacCornack] to initiate a program with two basic objectives: first, the improvement of social, economic, and physical living conditions among the residents in the depleted areas; and, second, the replanning of these areas on a sound economic basis.

This reconstruction would follow the principle of selecting an area which is not so large as to create an impossible financial burden. This program is not a research program, nor another survey; it is not a program to create a city plan, nor will it interfere with any of the functions now performed by planning agencies, social service groups, or other organizations functioning in the field of investigation and fact finding.

It would be an organization which would consist largely of the financing, business, manufacturing, labor, and ownership groups of the city, organized as a non-profit corporation for the purpose of analyzing the facts already available through the many surveys existing, and to work out a definite program for starting reconstruction in blight areas.

It would be a program to coordinate private capital and government subsidy so that each might perform its logical function without interference and on a broad enough basis and with such a long-range viewpoint as to recreate sound values in the cities and to restore property on a sound financial basis.

Specific Objectives

Specific objectives are:

To examine the present physical conditions of the entire section to determine the areas for demolition and later rebuilding or allotment to other uses, and to determine what properties can be reconditioned for profitable land utilization. This will require a study of housing conditions, street pattern, recreation, transportation, utilities, and educational facilities.

To analyze the relationship and the effect on the project and the adjoining areas of the zoning ordinance, the building code, and the health and safety laws.

To examine and study the taxation problem.

It is proposed to organize a non-profit corporation to undertake the development, administration, and financing of the study program. This organization should have broad civic membership in order to secure the full support of all public and private groups having a definite interest in the program.

Since the organization to be created is strictly non-political, it is essential that the organizations participating in the program should have no political affiliations, but it is extremely important for the welfare of the city that the greatest degree of cooperation between this private capital group and government should be maintained. Therefore, the following cooperating groups are recommended:

Local—the City Council, the County Commissioners, the Board of Education, the social welfare groups obtaining support from tax money, the local Housing Authority, and the local Planning Commissions.

State—the State Planning Board and other state departments having to do with the construction industry.

National—all government agencies having to do with the rebuilding of cities, especially in the housing field. This would probably be centered in the Central Housing Committee on which representatives from all the government agencies would be included.

Harrisburg Municipal Rose Garden

By J. Horace McFarland
Editor, The American Rose Society

SOMEONE may charge me with boasting, and I will admit that I am boasting about the Harrisburg Municipal Rose Garden, because it is worth boasting about. It happens that in more than twenty-five years of increasingly close attention to roses in America I have had contact with many municipal rose gardens, and have made many efforts to have more of these effective items established, in a national campaign for the maintenance of good order and public satisfaction as well as education and recreation.

The Harrisburg Municipal Rose Garden is not large. A strip 100 feet wide and 700 feet long fronts the building of the great Polyclinic Hospital on North Third Street in the capital city. This location might have had just an ordinary rose garden planted in it. Fortunately, the great designing genius of the late Warren H. Manning interfered with commonplace handling. He saw a way to make the restricted space uniquely beautiful and specifically useful for the higher park purposes. (He had previously designed the whole of Harrisburg's park system, which provides an acre of parks for every eighty people in the city.)

The Water Panel and the Fountain

From the standpoint of design, the double feature of the Harrisburg garden includes a water panel 16 feet wide and more than 300 feet long, reflecting the contiguous rose beds, each including 200 to 400 of a variety carefully selected for its color as well as its other qualities. Still more unusual, and perhaps unique, is the fact that the whole garden is dominated by the bronze fountain at its north end, central to the water panel. This fountain, the gift of M. S. Hershey to Harrisburg, was designed by Giuseppe Donato, a well-known American sculptor living in Philadelphia. As will be seen by the illustration, it is a charming composition of three figurines that seem to be throwing roses into the air.

Also distinct at the south end of the long garden is an open lawn primarily designed for public gatherings, such, for example, as occurred when the garden was dedicated, on September 15, 1938.

Of particular advantage to the design of this garden is the fact that its eastern limit is a sharp slope traversed by the steps which lead to the hospital grounds and entrance above. Thus the rose garden is of the hospital but distinct from it.

The Wonderful Growth of the Roses

To me as a confirmed rosarian, now comes the marvel of it all. The plants provided (about 8,000 in all) were just ordinary No. 1 nursery-grown plants. The ground in which they were to be put was to my mind not at all favorable for rose growth. The care used in the planting, which was done under the eye of the Secretary of the American Rose Society, was an unusual feature. With thoughtful provision of suitable garden soil, barnyard manure and other fertilizers, the plants were put in the ground hopefully. They grew and prospered beyond all expectation or experience, and they have done it again and again each spring, so that experienced rose-growers are utterly unable to account for the

richness of the bloom and the display thus afforded to the public. Even the Rugosa roses and the hardy climbers trained on the arches which form the western border of this garden have responded in a way that seems to us beyond all experience and reason.

That the garden has attracted thousands of people of the city who thus have before them throughout a long season the richness of beauty which only the rose can provide, hardly need be said. Started amid doubt as to its success, the Harrisburg Municipal Garden has fully served its purpose and has offered an example in design, planting and maintenance which might well be imitated. It is not a "gift" garden, for it was prepared and planted, and is maintained, wholly at the expense of Harrisburg's Park Department. There is a gift relation, however, for the ground used was given by the Polyclinic Hospital authorities through its president, the late George G. McFarland, at a permanent rental of $1 per year, with no strings attached.

A Meeting of the American Rose Society

The American Rose Society, which has a plan of peripatetic meetings from time to time, held one of them in the Harrisburg Municipal Rose Garden on September 15, 1938, attended by visitors from more than a dozen states. It is the father, or mother, as the case may be, of scores of such gardens, and on the occasion of a meeting in Hartford, Conn., June 21, 1938, gave its rarely conferred Gold Medal to Theodore Wirth, who planted the great garden in Elizabeth Park in 1903.

Planning a Reservoir of Public Construction—National, State, and Municipal

RECOGNIZING the importance of giving ratings of high priority to any public undertakings that promise direct aid in defense preparations, the National Resources Planning Board calls attention also to the fact that "the development of a strong, vigorous and healthy national economy represents an essential phase of preparation for total national defense."

Recommending a "shelf" or "reservoir" of public construction projects of tested value, the Board suggests (in its January, 1941, report on "Development of Resources and Stabilization of Employment in the United States"):

1. Continued and invigorated efforts to secure the preparation of *six-year programs or capital budgets* by Federal agencies, state governments, local governments, and other agencies, public and private, anticipating a large volume of construction activity.

2. *Development of alternative lists of projects* included in six-year programs according to size of the project, types and locations of skilled and unskilled labor involved, materials needed, rapidity of beginning, and flexibility of termination—all in relation to employment stabilization.

3. *Immediate inauguration of surveys*, investigations, and preparation of engineering plans and specifications for selected projects through allocation of aids to Federal and non-Federal agencies from a revolving fund to be administered by the President through his Executive Office; and reimbursed to the revolving fund as part of the cost of construction of the project.

To permit rapid inauguration of work on projects in times of need:

4. *Advance authorization by the Congress* of procedures for grants, loans, guaranties of loans, leasing arrangements, or other devices for aids to state and local governments for non-Federal projects for employment stabilization effective upon appropriation of funds by the Congress.

5. *Advance authorization by the Congress* of construction of Federal projects in six-year program of "A" priorities. Such authorization should be effective upon appropriation of funds by the Congress, and not in itself involve any commitment for the immediate construction of the project.

6. *Appropriation for advance purchase of sites* of projects by appropriate governmental agencies.

7. *Development of method of financing public works* projects and studies of related problems of investment, taxation, and the Federal, state, and local shares of responsibility for costs of various types of public works and related activities.

8. *Coordination of public works* construction at all levels of government, with other public policies which affect the level of business activity and employment, such as fiscal policy, social security policy, and policies of aid to private enterprise.

Why a Municipal Electric Plant?

Take Charlevoix, Michigan

CHARLEVOIX, a well-known northern Michigan resort city, enjoys a custom and privilege which no doubt is unique in the many cities owning and operating municipal power and light plants. The Charlevoix diesel-electric plant not only furnishes free energy for all city street and park lights, but also permits the connecting of a porch-light circuit ahead of the meter for the purpose of lighting all porch lights in the city at no cost to the home owner. This practice has been followed for many years, and although at times the privilege is misused, it is the consensus that the effect created and the advertising value derived are well worth the cost of the extra fuel oil.

The initial venture of the community into municipal ownership of an electric generating plant and distribution system was in 1918, when a hydroelectric plant then furnishing the city with energy was purchased. This plant is located approximately 25 miles south of Charlevoix at Bellaire, Mich., and power is transmitted from this plant to Charlevoix over a 23,000-volt line, this being the longest municipally owned transmission line in the state. For the three-year period following the purchase of this plant, it took care of all generating requirements. In 1921 it was decided that a steam auxiliary plant was needed to take care of summer peaks, and as a stand-by plant if trouble should develop at the Bellaire station. A power plant was built at Charlevoix, and two Skinner uniflow engine sets were installed with boilers, auxiliaries and switchgear. This additional capacity was sufficient until 1930, when summer peaks increased to a point where it again became necessary to install more generating capacity.

An addition was built and a diesel engine-generator installed of 450-kw capacity at 80 per cent power factor. For a time the combination of the steam, diesel and hydro was sufficient, but with increased loads due to stove and other appliance installations it again became necessary to install more generating capacity. Another addition was built for two diesel-engine sets, and one 500-kw diesel was installed in 1938. The steam equipment was sold in 1940 and is being replaced by a 250-kw diesel engine which will be used with the hydro plant for the off-season months and for summer peaks. This smaller unit will operate in place of either of the large diesel sets in order to get better fuel economy and save wear on the large units, either of which is only used to about 25 per cent of capacity during the winter.

	1940
Free Electric Service	$18,000
Sales to Citizens	57,000
Surplus	19,000
Population 2,500	

By D. F. HERRICK
Superintendent, Charlevoix, Mich.

Peaks in load in a resort community usually occur in August rather than during the dark winter months, so that we benefit in the purchase of fuel oil. Our larger purchases occur in May just after the winter price reduction, and we make any additional purchases in the summer at the lower prices. After the resort season, or by the middle of September, we purchase sufficient oil at summer prices to hold over until May. The bulk of the energy developed by the hydro plant is generated in the winter and spring months. The August peaks are approximately double those in December, and to take care of the July and August demand, we must have about twice the generating capacity we would need without resort business.

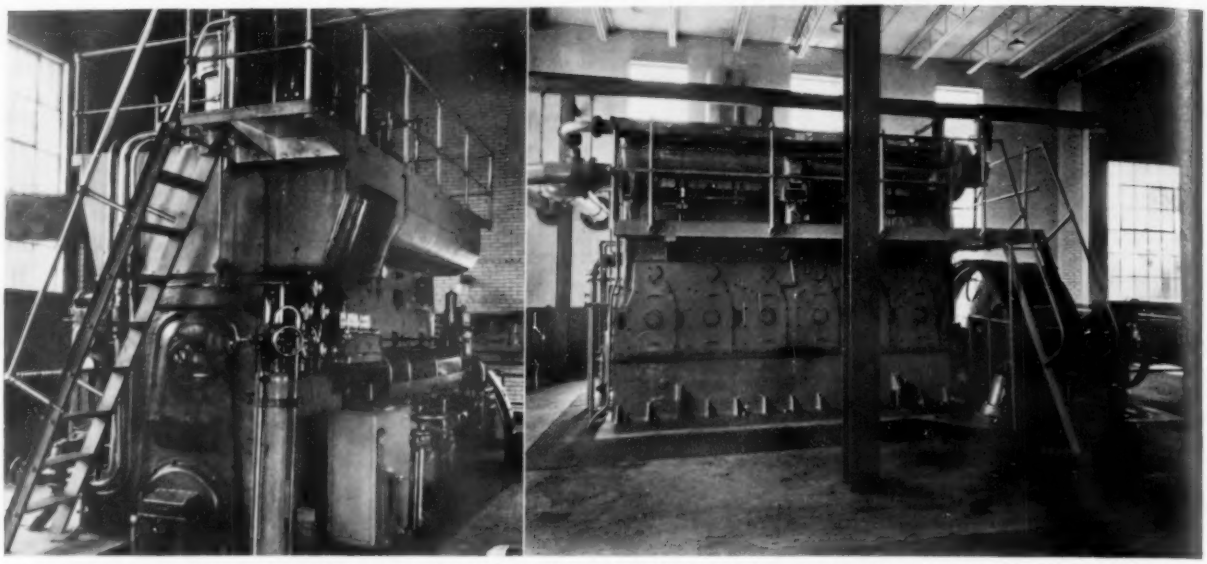
Hydroelectric

The hydro plant, 25 miles south of Charlevoix at Bellaire, Mich., consists of two Leffel turbine units operating on a 16-foot head. One unit is a type "Z" 32-inch wheel direct-connected to an Electric Machinery generator of 225-kva capacity. The other is a type "Z" 27-inch wheel direct-connected to a Westinghouse generator of 150-kva capacity. Both generators are 60-cycle, 2,300-volt, 3-phase, delta-connected, 200 rpm, with Woodward type HR governors regulating the speed control. The generators are excited by belt-driven General Electric direct-current generators. All power circuits inside and outside the station are lead cable in tile duct, and all low-voltage and control wiring in standard metal conduit.

The substation is entirely enclosed by Cyclone fencing and consists of a bank of three 125-kva, 2,300/23,000-volt, 60-cycle, single-phase General Electric transformers. This transformer bank is connected closed delta on both low and high voltage sides. The rest of the substation equipment consists of lightning arresters and disconnect switches. Energy is transmitted to Charlevoix over a 23,000-volt, 3-wire, 3-phase transmission line a distance of 25 miles. At the Charlevoix end there is a similar transformer bank, the secondaries being Y connected to the distribution system in Charlevoix through a panel and switchgear in the Charlevoix station.

Diesel

The Charlevoix plant is equipped with one 660-hp Nordberg, type NF, 3-cylinder, air-injection diesel engine-generator set installed in 1930 and one 721-hp Rathbun-Jones, type PR, 6-cylinder, mechanical injection diesel engine-generator set installed in 1938. Both units



NORDBERG 450-KW AIR-INJECTION UNIT AT LEFT, AND RATHBUN-JONES 500-KW UNIT AT RIGHT, IN CHARLEVOIX MUNICIPAL ELECTRIC PLANT

Shown at the right of the stairway on the Rathbun-Jones diesel engine is an alarm panel; the alarm sounds for too high temperature of either the cooling water or the main bearings, and also for loss of lubricating oil pressure

are equipped with General Electric generators, the Nordberg unit with a 2,300/4,000-volt, 60-cycle, 4-wire, 3-phase, 450-kw capacity at 80 per cent power factor, direct-connected General Electric exciter, while the Rathbun-Jones unit is equipped with a similar generator but of 500-kw capacity at 80 per cent power factor and a belt-driven General Electric exciter.

We are purchasing another unit of approximately 250-kw capacity at 80 per cent power factor. Both existing diesel units have the usual auxiliaries, and lubricating oil is cleaned for these engines by a Skinner oil filter operating either by batch or by continuous system on either engine. These engines are cooled by softened water, the soft water being cooled in turn by a heat exchanger through which raw cool lake water is pumped as the cooling medium. This lake water is then emptied back into the nearby lake. Such an arrangement for cooling is of course ideal, in that capital investment and operating costs for cooling are reduced to a minimum.

Distribution

The primary distribution system of some 22 miles is all 2,300/4,000-volt, 4-wire, 3-phase, with the neutral wire grounded. The system is divided into three main circuits, two of which pass by submarine cable under the two ship channels dividing the north and south sides of the city. All primary work in the business section is underground cable in tile duct, as are all street-light circuits in this district. Transformer installations total 144 on the three circuits, and the capacity of these transformers totals 1,563 kva. These distribution transformers consist of 114 General Electric, 26 Westinghouse, 3 Uptegraff and 1 Kuhlman, and are of the following sizes:

Number	KVA Rating
4	37½
8	25
5	20
30	15
31	10
30	7½
15	5
17	3
4	½

The bulk of the primary lines are No. 4 and No. 2 bare copper while the overhead series street-light circuits are all No. 6 bare copper. The original Michigan cedar poles are being rapidly replaced by Western red cedar, ½-inch butt-treated poles, and within the next five years the distribution system will be in good shape.

The street-lighting system consists of eight series circuits, three of which are grounded at the far end at a common point. More than half the present street lights are ornamental, with a single lamp on a concrete post. The rest of the lights are the usual bracket type with reflector and mounted on the primary and secondary pole system. The street lights total 333, of which 203 are ornamental units with 4,000-lumen lamps. The bracket type are equipped with 2,500-lumen lamps.

Gross energy output for the fiscal year ended February 28, 1941, for the two plants can be summarized as follows:

	Kwh	
Gross generation-Bellaire.	1,225,000	
Less station uses.....	5,720	
Net output to substation..	1,219,280	
Received at Charlevoix.	1,131,300	
Loss on Bellaire-Charlevoix line	87,980	(7.21%)
Gross generation—Charlevoix	1,053,000	
Less station uses.....	61,960	
Net output to switchboard	991,040	

Net from:

	Kwh	
Bellaire at Charlevoix switchboard	1,131,300	(53%)
Charlevoix at Charlevoix switchboard	991,040	(47%)
Total energy to distribution system	2,122,340	(100%)

An analysis of sales to metered customers is listed below:

(Long Term)	Kwh	
Residence	570,341	(42.7%)
Commercial	420,051	(31.4%)
(Short Term*)		
Residence	183,425	(13.7%)
Commercial	71,735	(5.3%)
Power (all)	92,899	(6.9%)
Total metered sales....	1,338,451	(100.0%)

* Customers using electric service six months or less during the year are classed as "Short Term." While it is necessary to have twice the capital investment in generating equipment to take care of this type of user, only 19 per cent of our total metered sales are delivered to this class.

Free Service

Metered free services, to which energy is supplied by the plant at no cost to the recipient, are:

	Kwh
Street lighting	172,706
Park and harbor lighting	10,871
Water pumping	189,720
Sewage pumping	22,819
Buildings	38,259
Semi-public services	13,790
Total	448,165

Distribution system losses and energy supplied for free porch-light services are:

	Kwh
Gross generation—Bellaire	1,225,000
Gross generation—Charlevoix	1,053,000
Total gross generation	2,278,000
Metered sales	1,338,451
Metered free services	448,165
Station uses	67,680
Loss on Charlevoix-Bellaire line	87,980
Total energy accounted for	1,942,276
Total energy NOT accounted for	335,724

NOTE.—"NOT accounted for" includes energy furnished the free porch-light circuits as well as distribution losses. Assuming 8 per cent distribution loss, this would amount to losses of 169,787 kwh and leave 165,937 kwh used in free porch-light outlets.

Recapitulation of the entire generating picture appears thus:

	Kwh	
Metered sales	1,338,451	(58.7%)
Metered free services	448,165	(19.7%)
Metered station uses	67,680	(3.0%)
Loss Charlevoix - Bellaire line	87,980	(3.9%)
Distribution losses (Est.)	169,787	(7.5%)
Free porch lights (Est.)	165,937	(7.2%)
Total gross generation.	2,278,000	(100.0%)

To appreciate the value of the energy furnished free, take the 448,165 kwh of metered free services and add the estimated 165,937 kwh for porch lights, giving a total of 614,102 kwh, or 27 per cent of our gross generation. At 2 cents per kwh, it amounts to more than $12,000 for the year. In addition to this $12,000, the Department made a cash grant to the general city fund and a grant to the hospital totaling $6,200, thus making a grand total in gifts of $18,000. Yet in addition to these gifts, our operating profit was nearly $25,000 for the year.

The following income and expenditure tabulation indicate more in detail the financial condition of the Department:

	Dollars	Cents per kwh Delivered to Distribution System
Metered sales	58,937	2.78
Less. disc. & sales tax	3,190	.15
Net metered revenue	55,747	2.63
Misc. sales	3,664	.17
NET REVENUE	59,411	2.80
Operating Expense		
Diesel generation	12,372	.58
Hydro generation	5,618	.27
Trans. & distribution	9,908	.47
Commercial costs	6,520	.31
Operating costs	34,419	1.63
GROSS PROFIT	24,991	1.17
Overhead Expense	5,778	.27
NET PROFIT	19,213	0.90

The net indebtedness of the Department is $64,000, represented by bonds to be retired over the next 13 years. These 3 per cent bonds for $70,000 sold in 1938 at a premium sufficient to make the net interest rate 2.6 per cent for the period over which these bonds run.

1940
BELLAIRE PLANT DATA

Turbine hours run	12,135
Gross kwh generated	1,225,000
Average kw load	101
Peak kw load	300

1940
CHARLEVOIX PLANT DATA

Diesel hours run	5,097
Gross Kwh generated	1,053,000
Average kw load	207
Peak kw load	900
Gallons fuel oil used	93,408
Kwh per gallon fuel	11.3
Gallons lube oil used	555
Kwh per gallon lube oil	1,900

Personnel

The hydro and diesel plants are operated on an 8-hour shift with one day per week free time for each operator. Seven operators are required for the two plants. The line crew consists of a line foreman and three linemen, with a general superintendent over both groups. Meter reading is done by one man, and one clerk takes care of the billing, so that the total number required for the operation of the plants and distribution system is 13 persons. It may be added that this group also takes care of the water pumping station, water distribution system, and reading and billing of water accounts on a quarterly basis.

More Areas Eligible for Defense Housing

FOLLOWING recommendations by Defense Housing Coordinator C. F. Palmer, President Roosevelt has approved the addition of 36 localities to the original list of defense areas (as published in the May issue of THE AMERICAN CITY) in which houses for defense workers can be financed under Title VI of the National Housing Act.

The Act provides 90 per cent mortgage insurance by the Federal Housing Administration in localities "in which the President shall find that an acute shortage of housing exists or impends which would impede national defense activities." The housing which is expected to be provided through this legislation is intended for workers in the $1,800 to $3,000 income group.

The heretofore approved defense area list in which Title VI is applicable included 146 localities in 41 states and territories. The following are the newly approved areas:

The newly designated areas cover the following cities and "reasonable and normal commuting areas" serving these places:

Alabama—Anniston
Georgia—Albany
Illinois—Rockford
Indiana—Connersville, Kingsbury-LaPorte
Louisiana—Alexandria, Leesville-DeRidder
Maine—Bangor
Mississippi—Biloxi, Jackson, Meridian
Nevada—Las Vegas
New Hampshire—Manchester
New Jersey—Phillipsburg
New York—Albany-Troy, Greenport (L. I.), Rome, Ilion, Sidney, Watertown
North Carolina—Jacksonville, New Bern, Morehead City
Ohio—Lorain-Elyria, Mansfield
Pennsylvania—Johnstown, Ellwood City, Monessen
Rhode Island—Newport, Quonset Point-Warwick
South Carolina—Spartanburg
Texas—Goose Creek - Baytown - Pelly, Mineral Wells, Wichita Falls, Brady, Harlingen
Washington—Longview-Kelso, Spokane
Wisconsin—Madison, Green Bay
Alaska—Anchorage, Ketchikan, Sitka

(See page 5 of this issue for information regarding $150,000,000 now available for community facilities in defense areas.)

Sewage Treatment at an Embarkation Post

Fort Slocum Has Variable Population Averaging 2,100; Plant Designed for 500,000-Gallon Flow

By PHILIP ARTESE
Operating Engineer,
Sewage-Treatment Plant,
Fort Slocum

FORT SLOCUM, an embarkation post, is located on David's Island, in Long Island Sound, opposite New Rochelle, N. Y. The original sewage-treatment plans were drawn up by the Construction Quartermaster, Washington, D. C., and contract construction began in 1933. The plant was completed and put into operation the following year, but in 1939 it was reconstructed to improve its efficiency. It is operated under the supervision of the Post Quartermaster.

Sewerage

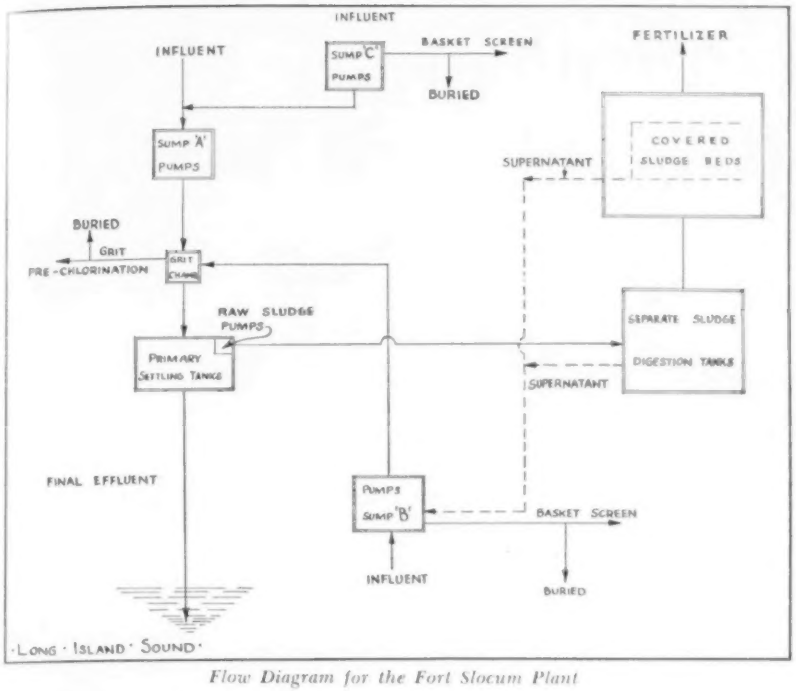
The sewer system at Fort Slocum is a separate sanitary system. Most of the sewage is domestic, the only industrial waste coming from the post laundry, so that the sewage entering the treatment plant is of average strength. All sewage flows by gravity to three sumps, A, B and C, located in different sections on the post. From these sumps, it is pumped to the treatment plant. At sump A are two 200-gpm Domestic horizontal centrifugal pumps, direct-connected to 3-hp Star electric motors. At sump B, there are two 100-gpm Domestic horizontal centrifugal pumps, direct-connected to 2-hp Star electric motors, while at sump C there are two Weil vertical centrifugal pumps, direct-connected to 1-hp Westinghouse electric motors. There is a basket screen at each sump through which the sewage flows before reaching the pump. The basket is hoisted and manually cleaned every two weeks, and the screenings are buried.

The Treatment Plant

Sewage enters the plant through two channels or grit chambers 2 x 4 x 6 feet, so that one channel may be in operation while the other is being cleaned. From the grit channels the sewage flows to hopper-bottom sedimentation tanks having a total capacity of 70,334 gallons. At present, two tanks are in operation with a capacity of 35,333 gallons. The detention period of the two tanks is 1½ hours. Sludge is removed from the bottom of the sedimentation tanks by either of the two single plunger type sludge pumps installed at the plant. One of these is a Domestic 70-gpm pump belt-driven by a 3-hp Star electric motor, and the other is a Marlow sludge pump of 70-gpm capacity, chain-driven by a 3-hp Brown-Brockmeyer electric motor.

The sludge is delivered to two unheated covered separate sludge digesters with hopper bottoms, having a total capacity of 60,000 gallons. The sludge pumps are also used to recirculate the sludge in the tanks. Supernatant liquor may be drawn off at three levels by gravity

A general view of the sewage-treatment plant at Fort Slocum, N. Y. Sump B pump house is at the left, the treatment plant in the center, and the glass-covered sludge drying beds at the right. The earth mound encloses the two 30,000-gallon unheated sludge digesters



Flow Diagram for the Fort Slocum Plant

to sump A and returned to the plant. Lime is added to the digesters by feeding it to the top of the tanks in solution during pumping to keep the reaction neutral or slightly alkaline. Digested sludge is pumped to 2,000 square feet of sludge drying beds having Metropolitan Greenhouse Manufacturing covers. The dried sludge is used on the post for maintaining lawns.

Chlorination

A Wallace & Tiernan semi-automatic chlorinator is installed for prechlorination of the sewage, but it can be used also to post-chlorinate the effluent if desired. The raw sewage is chlorinated from May 15 to September 15 of each year, the chlorine being added in the grit chambers, and a residual of 0.5 ppm is carried through the plant during this period. The final effluent is discharged into Long Island Sound.

There are weekly inspections by the Post Quartermaster and Army Medical Officer, and periodic inspections by the New York State Department of Health. The plant complies with the rules and regulations of the New York State Department of Health and the Tri-State Sanitation Commission, having received a provisional plant rating of I from the Commission.

Migrations Cause Water Utility Problem

Low-Income Group Movings to Sparsely Settled Sections Require Extensions of System with Consumers Sharing Costs

By HORACE J. COOK
Superintendent,
Auburn Water District

IN Auburn, Maine, as in many other sections of the country, there has been a decided migration of families from the center of the city to the outlying areas. This has been due largely to the desire to have a patch of ground for a garden, and a place where the children may play in safety, and to get away from other disadvantages of living in a crowded city apartment.

The family automobile, or the bus line, readily solves the transportation problem, but water service is an entirely different proposition. As each family acquires as large a plot of land as its finances will allow and builds only a one-family house, the revenue to the Water District per mile of extension is small, especially when these people leave property in the city vacant from which the District receives no financial return.

This situation is made more difficult for the Auburn Water District by the fact that the maximum rate for a one-family house is $13 per year and the city of Auburn pays nothing for the installation or annual rental of any hydrants.

Upon the receipt of a petition for water service in these areas, the Superintendent of the Water District explains to the petitioners the attitude of the District, showing the cost of the requested extension and the small return on the investment.

In practically every case these people have seen the justice of the viewpoint of the Trustees of the Auburn Water District. A proposal is then made by the water-supply corporation that in order to lower the cost of the main, and to increase the rate of return, the consumer must either dig or pay for the trench, and pay the maximum water rate for a single-family house.

The results show that this plan has been a distinct success. In 1939, of the 6,133 feet of pipe laid, the customers themselves dug or paid for 4,865 feet of trench. In 1940, there was a total of 7,721 feet in extensions. For this, the consumers dug 4,120 feet of trench. They paid for 2,343 feet more, and in one case the entire cost of a 6-inch main through 312 feet of solid rock was paid for by one citizen. This total of 6,775 feet on which contributions were made is nearly 90 per cent of the total number of feet of mains laid during the year 1940.

Collection and Conservation of Water in Honolulu

From the Eighth Biennial Report of Frederick Ohrt, Manager and Chief Engineer, Board of Water Supply

THE population of Honolulu, Hawaii, increased from 137,582 inhabitants in 1930 to 179,359 residents in 1940. This was an advance of 30 per cent in ten years, and exceeded the water-works predictions by about 5.5 per cent. The city's present rate of population increase cannot be applied as the basis of estimates of the city's future growth, because, as in many cities on the continent, it has not yet been determined how much of the growth is abnormal and how much will become permanent through absorption of personnel in the new works that are being created for defense. It is known, however, that the present population of Honolulu is of sufficient size to come near to requiring the full extent of the estimated fresh-water yield within the District of Honolulu, which has required an advance in the carefully prepared development program.

Water Consumption

The people of Honolulu daily use an average of 205 gallons of fresh, potable water each, from all sources, public and private. Ten years ago the average was 253 gallons per day for each person; and in earlier years the amount was much higher. The reduction represents elimination of wasteful use of water, which has come largely through a better public understanding of the importance of its conservation. One of the first activities of the Board of Water Supply, when it undertook to rehabilitate the city water works, was to impress on the people of Honolulu that their fresh-water supply is one of their most valuable assets and that it would be folly to waste a personal possession of so great worth. That they appreciated and followed the advice is evidenced by the steady reduction of water consumed per capita.

Drouth and the population increase were reflected sharply in 1940 water consumption. The average daily requirement was 36.9 mg, an increase of 1.6 mg daily over 1939. The city's public service, operated by the Board of Water Supply, furnished an average of 20.5 mgd from the artesian areas and an average of 2.91 mgd from mountain tunnels and springs.

Discontinuation of private irrigation projects from the Ii and Beckley artesian wells within the city, and recognition by other private well operators of the necessity for conservation of the artesian supply, was reflected in the total drawn by their water works, their average of 13.5 mgd being 0.8 mgd less than it was in 1939 and 0.7 mgd below the 1938 figure. Conversely, the increased demand on the city supply,

The New Honolulu Board of Water Supply Building and the Beretania Steam Pumping Station

The Foyer of the New Board of Water Supply Building

coupled with a sharp decrease in the amount of mountain water available during the drouth, caused the public draft on the artesian areas to rise from an average of 17 mgd in 1939 to 20.5 mgd in 1940.

Mountain springs and tunnels, which can be counted on to deliver an average of 4 mgd in normal years, supplied an annual average of about 2.91 mgd last year, the daily quantity falling far below that mark during the drier periods.

It is significant to note that on July 25, 1940, at the peak of the drouth, the city required water from all sources totaling 50.4 mgd. Only 2.1 mgd was available on that day from mountain sources, the remaining 48.3 mg coming from the artesian areas. Of this remainder, the city public service drew 28.2 mg and private wells took 20.1 mg. The record of that day's water requirement is important because it indicates the minimum amount of water that would meet the city's necessities at that time.

Available Water Supply

Normally, about 90 per cent of Honolulu's water supply is drawn from five artesian areas that underlie the city, while during dry 1940 about 92 per cent came from the subterranean source, the remainder being supplied by springs and tunnels in the valleys of the Koolau mountain range back of the city. Rain falling on the watershed areas in the mountains and foothills reaches the artesian areas by infiltration. How much fresh water in excess of 35 mgd can be drawn from the Honolulu artesian areas is not known, and is a problem on which geologists and engineers are still engaged.

Inasmuch as the city's regular requirement from the artesian source

The Water Sales Accounting Division

has already reached 34 mgd, leaving a margin estimated at only about 1 mgd, it is apparent that additional water must be directed into the artesian areas to increase the available supply if the Board is to avoid restriction of water use.

Increasing the Artesian Reserve by the Use of Tunnels

The Board of Water Supply recognized the situation of the artesian reserve and tentatively adopted a plan and authorized the sale of $750,000 of Revenue Bonds. This issue was sold on April 15, 1941, to finance the new water development and conservation program. The bonds were offered without a fixed interest rate, the low bid winning the award. A provision was made that in the event of a tie, the highest cash premium should prevail. The Bank of Hawaii took the issue at 2.7 per cent coupon interest and a cash premium of $2,095. This bond issue will be redeemed from revenues of the water works, and without any contribution from taxes; and the project will be carried out without any increase in water rates.

Diversion of Waste

In addition to development tunnels, the project is to divert part of the water that now runs to waste at sea in streams from the upper valleys back of the city, into tunnels driven into the mountainsides on the Honolulu watershed areas. Extensive geologic and engineering studies have convinced the Board that some of the water thus diverted can be conserved for future use by infiltration into the artesian areas. This development and other features of the recharge program will add about 9 mgd to the artesian supply, it is hoped.

The Water Sales Billing Division

Conservation of Water

The Department has continued its program of well-sealing and other measures for the stoppage of water waste. During the past two years, seven leaking wells were sealed and two were recased, stopping a waste of about 4.2 mgd. Wet-land irrigation discontinued as the result of the sealing of two of these wells saved an additional 0.6 mgd. Other wells are being checked for leakage and tested for the amount of waste, if any.

An additional 250,000 gallons daily was conserved to the mountain water supply by the reconstruction of an old wood-stave pipeline. Another and larger saving of water was made by the installation of a hydraulic turbine pump near the Nuuanu booster station, by which about 0.6 mgd of unused water from the Nuuanu aerators is now being utilized. This pump forces water from the Nuuanu high-service reservoir into the distribution system.

The total water conservation from these activities is about 5.65 mgd. The well-sealing program has not been costly in cash expenditure, but has been time-consuming and has required the utmost tact and patience. Owners of leaking wells cooperated splendidly when it was made clear that the undertaking was in the best interest of the community. The results that have been obtained are of inestimable importance to the future of Honolulu's water supply.

The problem of recovering water that has been wasted through underground leaks in well casings was recognized as early as 1916, but little progress had been made towards meeting it when the Honolulu Sewer and Water Commission was created in 1925. Only two wells had been sealed up to that time. The Board of Water Supply, the permanent operating agency that succeeded the emergency commission in 1929, has made well-sealing a major activity, and the result has been that among the 175 artesian wells in the city 57 have been sealed. These operations, and the re-casing of 12 leaking wells by owners who were unwilling to discontinue their privately operated water systems, have effected an accumulated conservation of 16.4 mgd since 1920.

One hundred thousand gallons of mountain water was returned to the supply daily in November, 1940, from Manoa tunnel No. 3, which was sealed in 1937 in connection with litigation over the water rights. One phase of that case has been settled, permitting the use of this water, which can be increased up to 0.2 mgd. The Court held that 17.1 per cent of the flow from the tunnel was water that would normally have flowed into the stream.

Non-Potable Water Uses

With new sources of water within the District of Honolulu nearing the limit of their development, and the waste water situation well in hand, attention is being turned to the question of substituting non-potable water for uses to which it is suited but which are now being supplied with potable water. Investigations lead to the belief that 2.6 mgd of potable water can be conserved by the use of non-potable water for air conditioning, condensing, gas scrubbing, and similar operations.

Unaccounted-for Water

That progress is being made in the conservation of water within the water-works system is indicated by the fact that in 1940 unaccounted-for water amounted to only 12 per cent. In 1928 the figure was 39 per cent of all the water that was being put into the system. The 1940 figure is 2 per cent lower than that for 1939; and, while 12 per cent is below the average in general water-works practice, efforts are being continued to make further reductions. Unaccounted-for water comprises leakage in mains, under-registration of meters, fire-fighting, cleaning of reservoirs, and flushing of storm sewers and fire hydrants.

Distribution System

The 322 miles of pipelines that make up the Board of Water Supply distribution system cover an area of 27.2 square miles. This is about one-third of the total area of the District of Honolulu, which it is the function of the city's water system to serve. During the past two years, 28 miles of new pipeline were added to the city system and 3 miles removed.

Twenty-four covered reservoirs and tanks in the distribution system have a capacity of 18.5 mg. These reservoirs serve the dual purpose of maintaining an even pressure in the water lines and of providing storage for peak-load periods.

Fire-protection service, extended by the new water mains, was provided for by the addition of 242 hydrants, giving the city water system a total of 2,140 hydrants, a defense factor significant to the entire city.

Public Relations

The Water Sales Division has wider direct contact with the public generally than any other unit in the water-works organization, which makes it imperative that its staff shall at all times exercise tact and courtesy and be constantly alert to the interests of water users. This spirit is manifest throughout the Division and the Board's policy of "prompt service, cheerfully given" has been strictly adhered to throughout the Department.

Pursuant to this policy, all divisions of the Department have continued watchful of water consumers' interests. Sales records are posted and bills are rendered promptly. Leak and waste notices are sent to water users whose bills show any sudden change that indicates the possibility of defective plumbing or other cause that may result in the consumer's taking, and being required to pay for, water from which he does not benefit. Information slips, sent out with the monthly bills, keep the community informed of the activities of the Department, its financial position and plans for operations and developments. Reports of dissatisfaction with any phase of the service are followed up at once, and adjustments, if required, are made promptly. It is the ambition of the Department that the people of the community shall feel that the water service is *their* service. To this end, it is impressed on every employee that to the public *he* is the water works, and that the maintenance of cordial public relations is part of his duty.

(*Continued on page 79*)

Improving Gravel Roads in Town of Middleboro, Mass.

Old Surface-Treated Gravel Roads Resurfaced Economically with Road-Mixed Gravel from Town Pit

DURING the summer of 1940, the town of Middleboro improved two miles of old gravel roads in different sections at a cost of between $1,800 and $2,000 per mile of 18-foot surface. Nothing had been done to these old gravel roads for about seven years when the state had used them as a detour, oiling and scraping them regularly, but even with blading the roads were greatly in need of a good surface suitable for secondary highways. The road was straightened, removing a number of kinks, but practically no additional gravel was needed for the base, which had been maintained in the regular annual program.

Preparation for Road-Mix

The road to be resurfaced was scarified with the town's 15-ton Buffalo - Springfield three - wheeled steam roller to a depth of about 5 inches. The base was then reshaped and rolled and thoroughly water-bound, following which it was planed with an Adams patrol grader pulled by a truck until dry and thoroughly compacted. A tack coat of ¼-gallon per square yard of Tarvia B was then applied to the road 18 feet wide. This was the width of the finished surface, which has little use by heavy commercial traffic or wide vehicles. Immediately following the tack coat the road was closed for about two hours to allow the tar to penetrate the surface; then it was sanded lightly by hand from a truck to prevent pick-up by traffic. Traffic was allowed to use the road for from two to three weeks, depending on the weather, while the tack coat was thoroughly curing.

The Town Gravel Plant

Formerly, the town used to move its portable gravel plant around from one pit to another, but that was expensive when the cost of moving the plant was added to the cost of leasing the pit. Recently a large pit was purchased by the town, and a Cedar Rapids No. 916 portable gravel crushing plant was installed with the conveyor delivering the product to a large bin from which the trucks are loaded. The plant is fed with gravel by a ¾-yard Pioneer dragline bucket operated by a National two-drum hoist.

Mixing crushed gravel and Tarvia with a 10-foot blade Allis-Chalmers power grader for a new town road in Middleboro, Mass.

This broom outfit, built on an old grader frame, is towed by a truck and insures even spreading of the sand of the seal coat

The Road-Mix Operation

The gravel from the town plant with a maximum 1-inch stone is spread from the tailboard of the truck, with the board chained to give a uniform spread. The haul from the plant to Highland Street, where the operation described was carried on, is about 16 miles, requiring the use of six town-owned Ford, Chevrolet and Dodge trucks. Hauling was started on a Monday morning and the tar was on and mixing started by Thursday afternoon. The gravel is spread the full 18-foot width of the road to a depth of about 2½ inches loose. In order to incorporate the new gravel spread on the surface with the base material, a 12-foot McCormick-Deering spring-tooth harrow in two 6-foot sections was pulled through by a truck. This loosened up the material which had been somewhat compacted by the traffic which used the road during the spreading operation.

The gravel was shot with two applications of 0.4-gallon per square yard for the full 18-foot width with Tarvia filling the Massachusetts specification T6 for 24-60 viscosity tar. The first application was then harrowed thoroughly to mix it, and the second application was made

and harrowed. The harrowing was continued Thursday afternoon after all the tar had been applied, and all day Friday. It is found that this operation makes it much easier for the grader to mix the aggregate and binder, since it aerates the material and starts curing.

A hired Allis-Chalmers power grader with a 10-foot blade started working at 10:30 A.M. on Friday, operating for seven hours mixing the material and then windrowing it at the side of the road at the end of the day. Starting again Saturday morning, the grader continued mixing for 7½ hours. An interesting variation of the usual mixing operation is used by the town of Middleboro. The grader is run forward and backward with the blade working on the material both ways. The backward motion gives a kneading action that breaks up any lumps in the material which would ordinarily continue rolling if worked only with the front of the blade.

The grader, hired from Thomas Brothers of Middleboro, has mechanical control and dual drive on four rear wheels with a 22-hp engine. The mixing blade is specially curved to give an unusually good throw and mixing action.

At the end of work on Saturday, material was windrowed at the side of the road until Monday one week from the start of the operation. On this second Monday, the material was worked again, and then spreading began at 10 A.M. and continued until 3 P.M. As soon as it was spread, it was rolled with a 12-ton Buffalo-Springfield roller, but to prevent sticking it was very lightly sanded before the roller started operation. When the rolling was completed, the road was left from twenty to thirty days before sealing with tar.

Sealing the Surface

A truck-drawn rotary broom was used to thoroughly clean the surface before the seal of 1/3-gallon per square yard of Tarvia, meeting Massachusetts specification T6, was applied at 130°F. This was immediately sanded by hand from stock piles at the side of the road. In order to secure as uniform a distribution of the sand as possible over the surface, a special drag broom built of Kinney steel brooms and attached to an old grader frame, so that the pressure and position of the brooms can be changed at will, was pulled over the surface by a truck. When this work was finished, the job was complete and traffic was allowed to have the road to itself.

The work was done under the direction of Paul F. Anderson, Superintendent of Streets. Edward C. Peterson is Town Manager.

By-Passes Need Zoning Protection

By LAWRENCE McCRACKEN

WITH investments of millions of dollars in by-passes around cities threatened by encroachment of private business, State Highway Commissioner G. Donald Kennedy of Michigan, his aides, and members of the Legislature are seeking a solution in some type of zoning or other restrictive measures.

As an example, Kennedy points out that a divided highway with three lanes on either side has provided fast, safe transportation between Lansing and East Lansing. A speed of 45 miles an hour has been permitted, and the highway has been able to handle a traffic of 15,000 cars a day. During recent years, a bowling alley, a roller rink, and a beer garden, all catering to local trade, have located on the highway. Cars are now parked in one of the three lanes at all hours. At night, drivers veer away from the parked cars, thus reducing the effective driving space to one lane on each side, and reducing the traffic capacity of the road at least two-thirds.

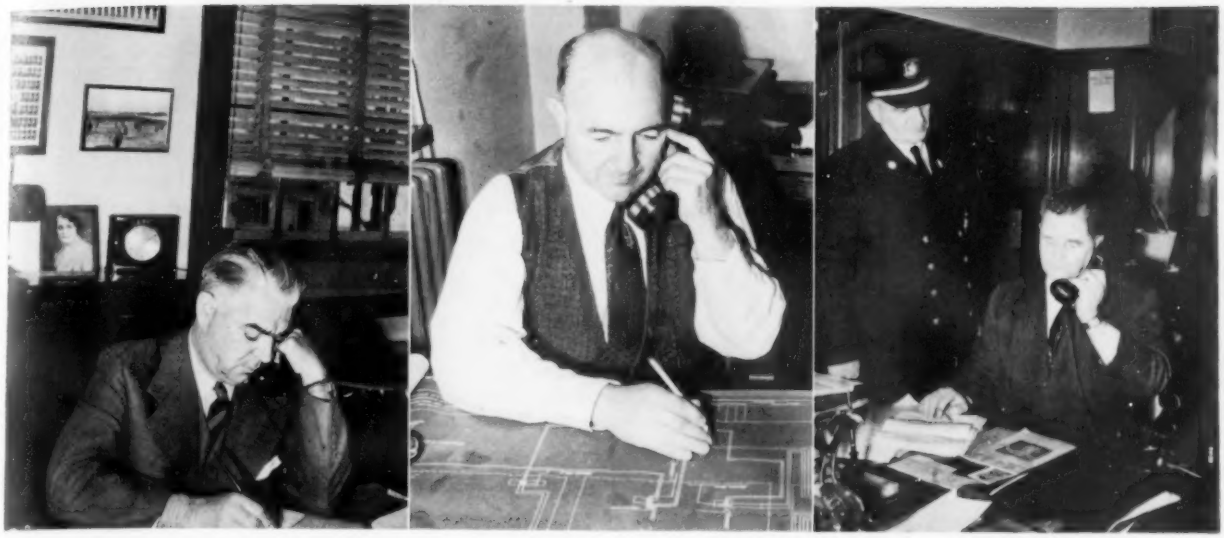
Private business reaps little benefit from the location, but such locations cause major losses to taxpayers and multiply worries of municipal and highway officials. Surveys disclose that the location of such businesses also boosts the fatal accident rate by several hundred per cent in many cases.

Local zoning will prove ineffective, it is feared, because of reluctance of local officials in many cases to enact legislation adversely affecting a business man or group of business men who are likely to wield wide influence in their community—especially when such legislation would only serve to benefit through-traffic. Members of the Legislature and the Detroit Automobile Club have thus taken up the study of the problem with the idea of devising some method of solving it on a state-wide basis. The problem is complicated by the constitutional question as to power of the state to enact zoning laws.

One solution suggested has been to buy up sufficient property along the rights-of-way of proposed future by-passes so that any businesses which locate there will be moved back a considerable distance. At Flint, Mich., the Dort Highway, built as a by-pass around the city, is now a congested city street. Telegraph Road, around Pontiac, Mich., built for the same purpose, is also rapidly becoming congested with many local businesses.

One serious traffic hazard on by-passes as well as main express highways which will be considered with the problem as a whole is the location of roadhouses and other business between intersections. Rats'-nests of uncontrolled parking develop about these places, with cars backing onto the highways, and other cars parking on the shoulders, to create a serious menace. Channelization of parking with supplementary access lanes is suggested as one remedy.

One-Half Divided Highway Between Lansing and East Lansing, Mich., Showing Parked Cars Reducing Traffic Capacity



Left to right, Chief Carl Brooks of the Dearborn, Mich., Police Department; Carl J. Schoeninger, Associate Electrical Engineer of the Detroit Water Department; Senior Inspector J. Treade, and Superintendent Louis L. Bang, of the Detroit Police Department

Interior Telephones for City Departments

ONCE a gadget becomes a universal necessity, it is studied for more intensive, convenient, special and economical uses. Public telephones are almost as common as doorknobs. An office without a telephone would be a place of mystery. Two offices, two telephones; three offices, three telephones; and so it goes, until nearly every clerk has his telephone, even if his chief need of it is to talk to other clerks.

When was it that the first discerning eye saw the need of a separate interior telephone system? Why load up the public - telephone switchboard with inter-office conversations?

A quarter of a century ago the Department of Docks and Ferries of New York City and the Bureau of Rivers and Harbors of Chicago installed automatic interior telephone systems, and still have them. They have been found to be exactly suited for bridge patrol. There are many other municipal locations where public telephones would be out of place, yet where a communication system is needed. Consequently, the Coney Island, N. Y., sewage-treatment works has such a private system serving ten telephones. Water works and municipal electric plants use them.

The Chicago Bureau of Electricity has operated a private 100-line automatic intercommunicating telephone system since 1926. A total of 77 circuits are now operating through this switchboard, serving all offices and substations. Included are nine electric-light patrolmen's automatic box circuits which serve a total of 53 street telephone boxes at important street intersections. Superintendent of Electricity W. A. Jackson says: "These lines have been found to be a very efficient and dependable method of inter-office communication." As proof of this, Mr. Jackson continues: "When funds are available, it is proposed to increase this system to a total of 300 lines to extend the service to the various offices of the Bureau of Streets of this Department of Streets and Electricity."

Smaller but equally essential systems are used by the Board of Water and Electric Light Commissioners of Lansing, Mich., and the Public Lighting Commission of Detroit. "We consider an inter-office system very desirable," says General Manager Otto E. Eckert of the Lansing Board.

Natural for Police

Compelled to be alert in the matter of communications of all kinds, police departments have found private interior telephones desirable for economy as well as efficiency. A few of the comprehensive systems are those of Columbus, Ohio, 45 telephones installed in 1929; Boston, with 50; Chicago with 280, and Detroit with a trial of 18 lines installed in the Tenth Precinct in 1930 and 400 lines installed in the Petoskey Station the next year. In addition, the Detroit police use Automatic Electric Company's cordless-type dispatcher's board, which places at the dispatcher's fingertips all the resources of the entire department. Patrol wagons, ambulances, emergency squads, are instantly summoned by the P.A.X. police intercommunicating system. The flick of a key connects a telephone line with the police radio station and automatically sets the transmitting equipment in operation for immediate broadcast, so that 3 seconds gets a call to a radio car or motorcycle.

Widespread Application

Forty years ago, commercial and industrial companies began inquiring into the availability of private telephone systems. Even then it was seen that each interior call took

two telephones out of public circulation. Two other needs developed: to have inter-office service at any hour, even after the operator had gone home; and to have secrecy. All these and other requirements were met with the utmost simplicity by the rapid practical development of the automatic telephone system, which was invented by Almon B. Strowger in 1889, and which has been adopted by telephone companies throughout the world. There are now 2,000 private users of this one of many types of inter-office system, and among them are nearly all kinds of city departments from those previously mentioned to the comprehensive system serving all the muncipally owned or leased buildings of the city of Philadelphia.

Such broad use as is made in Philadelphia, however, is rare. A strong mayor, taking the time to study it out, could accomplish it. A city manager could do it. The usual situation is that a department head sees how he could use a private system and installs it. Succeeding heads of that department retain it because of its obvious usefulness and practically negligible operating and maintenance cost. Indeed, annual cost is made up of interest and depreciation and perhaps a few dollars spent for electricity.

Study Its Values

Why do not a great many more municipal departments install private interior telephone systems? Why do not more cities equip whole buildings with them or connect all the principal officials?

As with many other types of equipment, it is a matter of buying what the cities need instead of that which is most easily obtainable. In the matter of inter-office communication, the cities need convenience, satisfaction, taxpayer credit, efficiency and economy. It is questioned whether these advantages, and especially economy, have been considered. A purchasing officer of a great city said some time ago that an inter-communicating system is indeed a great convenience but that it cannot be justified on the basis of cost. Yet more than one large department of this city uses such a system and has used it continuously for twenty years and would not be without it.

On the basis of convenience and logic there is no disagreement. The private inter-office system provides better supervision, secrecy where desired, better service on the public telephones. It fits in alongside the public telephone, supplementing it by providing two-track service by completing the business of an outside call. In addition, it can provide super-service in the form of the code call which reaches your man when he is away from his desk, executive priority by which you can break into another telephone conversation in case of emergency, conference service by which you can talk two-way with one or all the private stations. It is good service in any time.

President and Vice-President Stress Importance of Housing to National Defense

THE need for prompt and unselfish cooperation with the Federal Government by state and municipal governments and by real estate owners and private builders in providing adequate housing for defense workers was stressed by President Roosevelt in a letter to Mrs. Samuel I. Rosenman, Chairman of the National Committee on the Housing Emergency, read at the opening session of that Committee's two-day conference in Washington, June 11-12.

"I understand," wrote the President, "that your conference has brought together not only the representatives of civic associations and government departments—Federal, state and local—but also representatives of labor, of real estate boards and of private construction companies. It is in this type of cooperative effort and planning and discussion that the road to success is possible."

Endorsement of the efforts of the National Committee on the Housing Emergency towards pushing the right kind of housing in the right places with the greatest speed possible, was voiced by Vice-President Wallace in a talk broadcast over the NBC blue network on the evening of June 12.

Planning for Post-War Construction

"The better the job our housing agencies do now in cooperating in behalf of the defense program," said Mr. Wallace, "the greater will be their opportunities to do the socially right kind of housing job for the nation in the post-defense period. I therefore trust that the National Committee on the Housing Emergency will direct its effort toward promoting cooperation, not merely to get defense housing built with all possible speed, but also to consider the way in which housing can be used to help break the economic shock of the peace. I am one of those who believe that peace can be made to mean more and better housing, more and better food, less unemployment and more security for old age. There are forward-looking business men in both the United States and England who realize more than ever before that the test of democracy is whether or not it can provide good food, decent shelter and security.

"There are men in government, business, labor and agriculture who are willing to plan now as they have never planned before, for they want to make sure that we shall not again lose our hard-won peace. In all countries the people are hungry for that kind of peace which will give them freedom from the terrorism of the Gestapo, freedom from the fear of unemployment, hunger and lack of shelter, and freedom from the fear of future war. The people of the free democracies are fighting for this kind of peace. Eventually 90 per cent of the people in the dictator countries will be hungry for it, too, and with the help of democracies will drive out the dictator and his gang who now deny them these freedoms and this peace."

Production Accounting at Bridgeport, Conn.

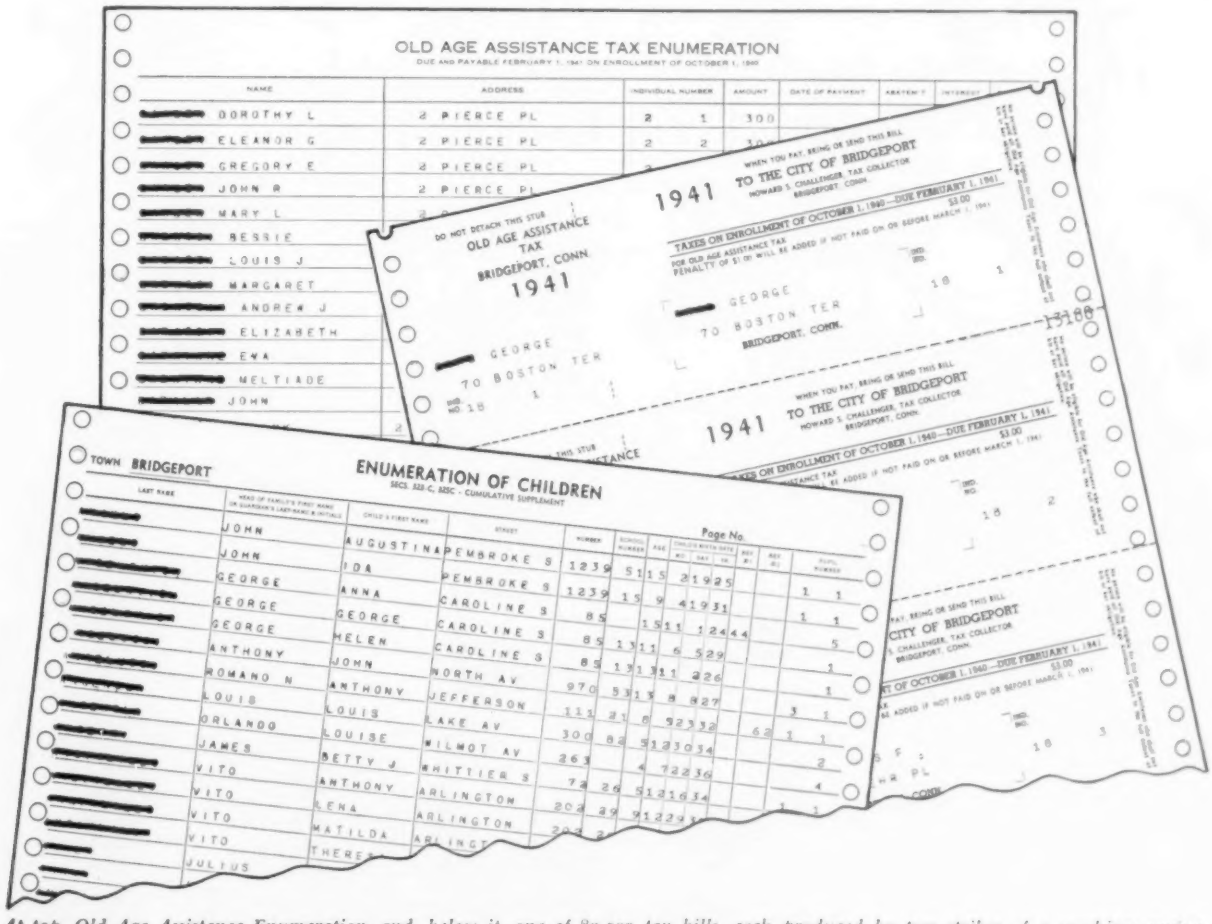
By PERRY W. RODMAN
Comptroller, City of Bridgeport, Conn.

THE city of Bridgeport, Conn., has a production accounting system which operates like a manufacturer's assembly line. More than 40 separate accounting operations are fitted into the routine of the tabulating machine room. None of these interferes with the other operations, and it is always possible to add special studies, which are often so valuable in saving money as well as in furnishing information to the commission and to the departments concerned that they become continuing routine operations.

Wondering why so many new school books were needed each year, the city recently finished and distributed to the principals of all the schools what is probably the most comprehensive inventory of textbooks ever made by a good-sized city. As a result, where the appropriation for textbooks had been $31,000 in 1939 and $20,000 in 1940, the next request for an appropriation is for $11,000. This inventory will be maintained.

Bridgeport has installed 200 parking meters and expects to have 1,000 meters. Already a method of control of both money collections and maintenance and repair records has been devised, to show the receipts and cost of every parking meter.

The Health Department must keep innumerable records, which


OLD AGE ASSISTANCE TAX ENUMERATION
DUE AND PAYABLE FEBRUARY 1, 1941 ON ENROLLMENT OF OCTOBER 1, 1940
NAME
ADDRESS
INDIVIDUAL NUMBER
AMOUNT
DATE OF PAYMENT
DOROTHY L
ELEANOR G
GREGORY E
JOHN R
MARY L
BESSIE
LOUIS J
MARGARET
ANDREW J
ELIZABETH
EVA
MELTIADE
JOHN
2 PIERCE PL
DO NOT DETACH THIS STUB
OLD AGE ASSISTANCE TAX
BRIDGEPORT, CONN
1941
GEORGE
70 BOSTON TER
WHEN YOU PAY, BRING OR SEND THIS BILL
1941
TO THE CITY OF BRIDGEPORT
HOWARD S. CHALLENGER, TAX COLLECTOR
BRIDGEPORT, CONN.
TAXES ON ENROLLMENT OF OCTOBER 1, 1940—DUE FEBRUARY 1, 1941
$3.00
FOR OLD AGE ASSISTANCE TAX
PENALTY OF $1.00 WILL BE ADDED IF NOT PAID ON OR BEFORE MARCH 1, 1941
TOWN BRIDGEPORT
ENUMERATION OF CHILDREN
SECS. 523-C, 523C - CUMULATIVE SUPPLEMENT
Page No.
LAST NAME
HEAD OF FAMILY'S FIRST NAME OR GUARDIAN'S LAST NAME & INITIALS
CHILD'S FIRST NAME
STREET
NUMBER
SCHOOL DISTRICT NUMBER
AGE
CHILD'S BIRTH DATE
REG. NO.
JOHN AUGUSTINA PEMBROKE S 1239 5 15 3 19 25
JOHN IDA PEMBROKE S 1239 15 9 4 19 31 1 1
GEORGE ANNA CAROLINE S 85 1 5 5 1 12 44 1 1
GEORGE GEORGE CAROLINE S 85 1 3 11 6 5 29 5
ANTHONY HELEN CAROLINE S 85 1 3 11 3 11 2 26 1
ROMANO N JOHN NORTH AV 970 5 3 13 8 8 27 1
LOUIS ANTHONY JEFFERSON 111 21 6 9 23 32 3 1
ORLANDO LOUIS LAKE AV 300 82 5 12 30 34 62 1 1
JAMES LOUISE WILMOT AV 263 4 7 22 36 2
VITO BETTY J WHITTIER S 73 26 5 12 16 34 4
VITO ANTHONY ARLINGTON 202 29 5 12 25 31 1 1
VITO LENA ARLINGTON
VITO MATILDA ARLINGTON
JULIUS THERES

At top, Old Age Assistance Enumeration, and, below it, one of 80,000 tax bills, each produced by two strikes of a machine; saving, $25,000. At bottom, enumeration of 25,000 children, which this year was produced on time as a by-product of the tabulators; saving, $6,000. These are only three out of 40 jobs performed by Bridgeport's Electric Punched Card Accounting Machines of the central accounting department, the advantages of which are typified by two other jobs, as follows: (1) Welfare Ledger—At 8,000 strokes per minute two days of 6½ hours each, an alphabetic tabulator produces the complete Welfare Record, which would take a typist 260 hours, or 40 days, to produce; saving, $35,000; (2) Complete Inventory of Textbooks, which showed School Board, individual principals and the municipal officials, what they had and what they actually needed, and cut in half annual expenditures for books; saving, $10,000

have to be hand-written, but plans are now under way to produce these by machine.

The enumeration of children of 4 to 16 years of age, for which the city is paid $2.25 per name by the State Board of Education, used to cost $6,000 to $7,000 to report in pencil, ink, or typewriting, and which was always two weeks or more overdue, is now turned out by the tabulating machines. The 25,000 names are typed, cross-checked, and produced on time as a by-product, for the job is fitted in with the other jobs. Moreover, additional figures are now presented, such as the number of children eligible for kindergarten next year.

The value of dollar accounting to a city should be measured by the dollar saving. This saving is determined by the degree of interest which the city council or commission takes in the system. It can exist as a misunderstood step-child or it can perform like a prodigy to the advantage of the municipal government and the citizens.

It is a mistake to consider these machines merely for a particular job. The fullest use should be made of them. Find out what work needs to be done and think of the enormous speed and ability of the machine. The machines are rented to Bridgeport by the International Business Machines Corporation for $11,000 per year, and the welfare work alone, if done manually, would cost the city an additional $35,000 for 30 to 35 clerks.

As the forms on page 63 indicate, modern accounting machines are files which can cut the chains on municipal accounting departments. They need not cause disquiet or reduction in personnel. The fact is that city government accounting is complicated, because of the human as well as the many mechanical operations. To do the whole job efficiently requires a focal point and tools whose speed of production avoids topheavy help and gets out all the records on time.

The most efficient use of such equipment brings to the fore the much-discussed point of centralized control. Private industry long ago decided that nothing can take the place of the centralized control function of the comptroller. Whether a company may have two or more plants or divisions in one city, or thirty or forty plants and divisions spread over the world, sooner or later the activities of the company as a whole will center on the one control point. One of the most desirable features of modern municipal accounting development is the rapidly increasing use of cost-finding procedures. Wherever there is an administration almost wholly devoid of politics, cost-finding is one of the first functions that the chief administrator desires to have operating. When this is undertaken, the best tools obtainable are those of machine accounting.

Cincinnati's Municipal Purchases During 1940

FOOD PRODUCTS $353,608.00		LUBRICANTS, OILS, GREASES AND GASOLINE $158,103.00		OFFICE AND HOUSE FURNITURE & HOUSEHOLD SUPPLIES $51,420.00	
JANITOR AND CLEANING SUPPLIES $45,439.00		PHOTOGRAPHIC, DRAWING AND ENGINEERING SUPPLIES & EQUIP. $36,525.00		STATIONERY, OFFICE SUPPLIES, BOOKS AND MAGAZINES $36,311.00	
HARDWARE, TOOLS, APPLIANCES, MECHANICAL PLANT SUPPLIES $78,373.00		COAL AND COKE $345,164.00		COARSE PAPER & PAPER PRODUCTS $20,633.00	
IRON AND STEEL CASTINGS AND FORGINGS $336,001.00		DRUGS AND CHEMICALS $147,229.00		OFFICE EQUIPMENT $10,076.00	
HOSE, BELTING, PACKING, LEATHER & RUBBER PRODUCTS $41,449.00		LABORATORY & HOSPITAL SUPPLIES AND EQUIPMENT $89,528.00		CLOTHING, TEXTILES, AND NOTIONS $136,826.00	
CONSTRUCTION, ENGINEERING, ROAD BLDG., PLANT & FACTORY EQUIPMENT $189,733.00		FORAGE, SEEDS, PLANTS, ETC. $28,139.00		LIVESTOCK & ANIMALS $1,972.00	
PAVING, ROAD AND BUILDING MATERIALS $471,046.00		RECREATIONAL SUPPLIES AND EQUIPMENT, SPORTING GOODS, & FIREARMS $25,240.00		MEDALS, BADGES, JEWELRY, NOVELTIES, ETC. $1,232.00	
LUMBER & WOOD PRODUCTS $92,036.00		ELECTRICAL SUPPLIES, FITTINGS AND PARTS $60,046.00		CONTRACTUAL SERVICES - NON-COMPETITIVE $393,265.00	
AUTOMOTIVE EQUIPMENT, PARTS, AND ACCESSORIES $310,912.00		TRAFFIC & SIGNAL SYSTEM EQUIP. & SUPPLIES, SIGNS & NO. PLATES $12,319.00		CONTRACTUAL SERVICES - COMPETITIVE $571,186.00	
PAINTS, VARNISHES, LACQUERS AND GLASS $31,710.00		PRINTING, ENGRAVING, LITHOGRAPHING AND BINDING $38,144.00		BONDING AND INSURANCE $5,855.00	

From the Annual Report of the Department of Purchasing of the City of Cincinnati—C. O. Sherrill, City Manager, H. F. Wagner, City Purchasing Agent

Local Government Is News — VII

Contacts with City Hall—Make or Break?

By Phillips Bradley

STILL another angle from which the citizen "sees" his city government is in his person-to-person contacts with public officials. This is perhaps the most important of all ways in which public relations between the citizen and his local government can be made effective.

These contacts run all the way from the lowest to the highest rank in the city service. Indeed, the most frequent direct contacts which the citizen has with city hall are with the rank and file. It is important, therefore, for every mayor, manager and department head to see to it that these contacts are as friendly and helpful as possible. Some of them are informal, for instance, between the policeman on his beat and the people in his neighborhood, the fireman on duty but not answering an alarm, the clerk answering a telephone or personal inquiry or communication. Others are more formal, as in the case of building, health, or water inspectors, or higher administrative officers responsible for hearings and other activities affecting the public. Still others relate to direct efforts which departments may make to interpret their work to the community.

Informal Contacts—The Police Department

As an example of the type of informal contact which will affect the way in which the citizen looks at his government, take the rank and file of the police force.

For example, perhaps more than any other city service the police officer symbolizes the government to the citizen. His activities cover a wide variety of regulatory and service activities besides his central function of law enforcement. The very fact that the police force is generally the municipality's largest single service (except the school teachers) gives it a primary influence in public relations.

Even in his primary function of crime prevention and repression, the way the police officer goes about his job has a very direct bearing not only on the amount of crime in the community but on the attitude of law-abiding citizens to the police function. Many police forces, for instance, have organized athletic and social clubs for juveniles and young adults or have established "big brother" relationships with juveniles in various police precincts. These activities, as practically every study which has been made shows, have a direct and helpful influence on the amount and nature of juvenile crime in the community. It is not only time but money well spent by the police department which establishes a regular system of juvenile contacts and activities, athletic and social, where juvenile crime is most frequent.

The accompanying examples are only a few from many all over the country of the ways in which city hall is trying to make the community government-conscious. Everywhere the story is the same: the better the citizen understands what his city is doing and why, the more adequately he is informed through day-to-day as well as through special demonstrations, the more likely he is to support sound legislative policies and administrative practices. From the policeman on the beat to the mayor or the manager, the opportunity is equal to the responsibility for making the citizen friendly toward his government by being friendly toward him.

The American City would like to hear more about what other cities are doing along this line. Write to us about it.

Another aspect of crime prevention and repression—and one of the most important ones from the public relations point of view—is the attitude of the police department and the police force toward labor disputes. As picketing and sometimes mass demonstrations have increased, police officers have often been confronted by difficult situations where open violence has been just around the corner. The way a club is swung, a poke in the ribs, an order given truculently, may spell just the difference between an orderly crowd and a mob.

This is admittedly a field in which there are no rules of the game for guiding the actions of indicidual police officers or, for that matter, the policies of a department toward strikes and demonstrations. But in all cities police departments work best which put some confidence in the willingness and ability of labor to be responsible in its action. When they give the individual police officer the kind of instruction which will make him act in a friendly rather than a belligerent way toward strikes and demonstrators, the city will be better behaved.

Take the matter of traffic violations and other minor violations of law. In the city of Pontiac, Mich., for instance, the Police Department writes a special letter to each new automobile driver, when he receives his license, welcoming him as a member of the driving public and soliciting his cooperation in the observance of laws. In Los Angeles the Police Department runs a radio Traffic Tribunal to which more than 115,000 Los Angeles citizens are known to listen. As Captain B. R. Caldwell, Director of Traffic, puts it: "We're attempting to eliminate some of the red tape that people run across in their dealings with city government . . . for every person who writes a question we know that there are hundreds thinking the same question." The program is designed not merely to give information, but to bring out ideas and information from the citizens. A penny postcard to the Traffic Tribunal insures investigation of any item which the citizen cares to send in: a street light is out; a stop sign is down; a limb from a tree has fallen into a street or hides a traffic signal; etc.[1]

In Keokuk, Iowa, the city government goes a step further and repays the boys and girls for good behavior on the Fourth of July and Hallowe'en with a Christmas party. Keokuk was the first city to inaugurate a safe and sane campaign and to stimulate respect for other people's property among youngsters from kindergarten through high school. Now more than 75 cities have followed Keokuk in its inauguration of an intelligent observance of these two holidays. The decline in infractions of the law and in destruction of property has been significant.[2]

[1] The American City, July, 1940, page 15.
[2] The American City, March, 1940, page 91.

There also are many informal contacts which others beside police officers have with the public. Traffic violations may be the most frequent contact points where courtesy toward the individual and intelligence in the application of the law can be a commonplace rather than a phenomenon. In smaller communities certainly, and even in larger cities, newcomers of the community can be made to feel at home. Either a personal visit from the police officer on the beat or from some other city official, or a letter of welcome, will give them a sense of civic interest and participation. The knowledge that a citizen away on vacation or a business trip can call up the police department and get special attention paid to his property will give him an added sense of the values he receives from his taxes.

Formal Contacts

There are many ways in which the public relations of city hall with the community can be improved in the more formal contacts which the citizen has with the official. Counter clerks and cashiers who handle most of the direct contacts at city hall or in department offices, are the first line soldiers in improving the government's public relations. Many of them are in the lowest-paid brackets, but they are the people who can make or break the city hall as a symbol of government for the citizen. The way in which they do their job—whether in a tactful, courteous, and competent way, or brusquely and inefficiently—will go a long way toward determining what people think about their government.

Here every administration can afford to pay considerable attention to an adequate training program, as well as to giving this group of city employees a sense of the value and significance of their jobs. Wayne University in Detroit, for instance, established an in-service training program for water inspectors, tax department clerks, and others who deal directly with the public. The course was established at the request of the city government. The University drew on the telephone and public utility companies for assistance, since their problems are so similar to those of city hall. The course was eagerly adopted by several times the number of city employees who it was anticipated would be interested. The number of complaints of inefficient or discourteous services which came from irate citizens to various departments has dropped almost to zero.

There is no city in which cooperation of this sort in developing a more effective public relations program will not be given by interested private agencies. The whole field of public welfare, for instance, has increased so rapidly that cooperation of private welfare agencies in training inspectors and receptionists may prove mutually helpful, not only in terms of public relations, but of resolving broader administrative questions of common concern. Similarly, outside inspectors and public works construction employees who have formal as well as informal contacts with the public need to be given a sense of their importance in this function as well as of responsibility for the conduct of their official duties. In fact, there is no function from health inspection to refuse disposal in which the attitudes and practices of public officials will not be reflected in the reactions of the public to the government they represent.

Handling Inquiries and Complaints

Take as a single problem the handling of inquiries and complaints. Many citizens look on city hall as a sort of universal dictionary and encyclopedia. Irrelevant questions may come in as often as relevant ones. Questions may be asked of the wrong department. If the citizen is rebuffed because he asks when the Battle of Agincourt was, or calls up the tax department when he should have asked for the water department, he is likely to hang up with a grouch toward city hall. If he does happen to ask the right question of the right source and does not get an intelligent or courteous reply—no matter how unintelligent or unfriendly his question may be, he is going to be a dissatisfied stockholder in the city's business.

One way of meeting this question is to establish a central information center for the city government as a whole or within each department. In larger cities, as several have found by experience, departmental information offices may be established in each district within a particular function—fire, police, water supply, etc. Whether a centralized or decentralized departmental or an over-all city information service is established, such a service can make an important contribution to cordial public relations between city hall and the community.

And the same is true of complaints. Here it is probable that complaints will be registered more directly and vigorously with the departments concerned. A central complain bureau may not be necessary even in the largest cities. But some kind of central control in the handling of complaints is clearly called for. First of all, it is important that those who receive complaints are capable of an intelligent and friendly approach to the citizen—who is all too likely not to be in a good temper. Some evidence should be given that the complaint will be investigated and reported on. Every complaint, no matter how trivial, should receive some kind of action which will indicate to the citizen that notice of his complaint has been taken by the proper city department. This involves a regular system of investigation, follow-up, and notification to the complainer of action taken. Although procedures may vary between departments, it is important that these steps be taken in every case. It may be important, too, for the mayor or manager to receive reports on the number and character of the complaints as well as on the functioning of the procedure for correction within different departments. Complaints can be valuable straws in the wind on the policies and practices of city hall.

An example or two will illustrate how an effective complaint procedure may be set up. The New York City Department of Water Supply, Gas and Electricity has developed a "work ticket" to cover all complaints received by the Department about water supply. The form includes data on when the complaint was received, a report made by the investigator who followed up the complaint, and on the work done by the repair crew. The latter item includes cost of materials and labor in making the repair and the notifications to the Fire Department on turning on and off of water. When a repair job requires considerable time, a "continuation sheet" is attached to cover all the work done on the job. In the words of John E. Eastmond, Deputy Commissioner of the Department, "If such a ticket system is maintained, certain derelictions are difficult to conceal, and certain information, the record of which does not always look good on paper, would be immediately available to department heads.[1]

This example of a departmental complaint service may be compared with the centralized system established in Dallas, Texas. The city government has set up a Bureau of Public Information and Complaints covering all departments of the city. The Dallas procedure has one unique feature. After remedying the complaint, a reply postcard is sent to the individual, asking him to indicate whether the assistance rendered by the city was "entirely satisfactory," "fairly satisfactory,"

[1] THE AMERICAN CITY, July, 1939, p. 37.

(*Concluded on page 78*)

Municipal Building, Peterborough, Ont. At the right, facing on the main street, is the Dominion Bank, on a site owned and leased by the city.

The buildings for a full block on the right are on land owned by Peterborough. The Market Hall, shown at the immediate right, and the stores below, are city-owned.

A City's Experience in Owning Real Estate

By H. Bronson Cowan

THE city of Peterborough, Ontario, population 24,000, owns one of the most valuable pieces of property in the municipality, an entire block, which corners on the very center of the city.

One half of the block consists of stores and other business properties which face on the main street. The north end of the block, facing a side street, is occupied by the city buildings, including the City Hall and the Police Station. A portion of these buildings is leased to the Peterborough Utilities Commission. The rest of the block is occupied by the market square, adjoining which, on a corner of the main street, is a commodious market hall situated above a row of retail stores, all owned by the city. In addition, the city owns considerable land and some buildings in other sections of the municipality.

In these days, when municipalities are finding themselves saddled with large areas of real estate which have reverted to them through the failure of former owners to meet their tax bills, the question of the best method of administering such properties is important. Possibly, therefore, something may be learned from the experience of the city of Peterborough in its administration of city-owned real estate.

Acquisition of the Property

The main property mentioned has been owned by the city virtually since its inception. The city was incorporated as a town in 1849. At that time its bounds were defined. From time to time since then, legislation has been enacted extending the city's boundaries and giving the city the right to assume the ownership of additional property for specific purposes. In the early days of the municipality, land was set aside for use as a cemetery, for county purposes, and a block in the center of the city as a market square. This land, the population of the city being small, was then worth only a few thousand dollars. As the city grew, the land increased in value. As it was not all required for use as a market, portions of it were leased for business purposes. While there have not been any sales of this property, it is of interest that a corner lot opposite to the property owned by the city sold, shortly before the depression, for $96,000. The building upon it was torn down in order that a new building might be erected. Property on the west side of the street is considered to be more valuable than property on the east side, where the land owned by the city is located, but the difference in values is not great.

One of the first buildings erected was the market building, to which reference has been made. As early as 1861 difficulties were experienced in the administration of city-owned property. The Town Council was facing financial embarrassment through having failed to set aside reserves to meet its obligations. In that year legislation was enacted providing for the appointment of a body to be known as the Peterborough Town Trust. This legislation enjoined that the debts and liabilities of the town should be consolidated and that debentures could be issued, upon the security of the town property, for the purpose of raising funds for the liquidation of the indebtedness of the municipality. The control of the various properties owned by the municipality, including the town hall, the market block, and other properties, as well as the right to invest the city's reserve funds, was given over to the five commissioners.

Other Properties Acquired

In 1904 the village of Ashburnham, which also owned its town hall property, including several stores, was incorporated in the city of Peterborough. The city thus acquired the ownership of these additional properties. On another occasion the city purchased property known as the Lang Farm, comprising some 61 acres, on its northern outskirts. This land contained large gravel beds and was acquired mainly on that account. There were some buildings on this property, the control of which, also, was assumed by the Town Trust, now known as the

Peterborough City Trust Commission. When it became necessary for the city to erect an Isolation Hospital, part of the Lang Farm property was used for that purpose.

Properties Controlled by City Trust

The city-owned land that is used for business purposes has been leased on 21-year leases. These leases provide that when they expire the city shall have the right to assume the ownership of any buildings that have been erected upon the land, at valuations to be determined, if necessary, by arbitration. The city has exercised this option on several occasions. In one instance the building now occupied by the Utilities Commission, adjoining the City Hall, was taken over in this way.

Lessees have the right to continue to occupy the premises thus acquired, but must agree to pay whatever rentals may be determined at the time. One large firm owns a number of buildings, including one used as a bank as well as a number of stores. This firm pays a ground rental to the city. In other cases the City Trust rents the stores direct to the tenants. Tenants have to pay the usual city taxes.

All 21-year leases must be approved by the City Council. The City Trust Commission has the right to enter into short-term leases, not exceeding five years, without the approval of the Council.

The Council elects the City Trust Commissioners. One commissioner retires each year. The city has used good judgment in the type of men selected. The Chairman is a former business man and bank manager. One of the Commissioners is a former member of the Canadian House of Commons. He, as is also the Secretary, is a member of one of the oldest legal firms in the city. Another of the Commissioners is a prominent business man and a former member of the Provincial Legislature. A fourth is a chartered accountant, favorably known throughout the city. The fifth is a widely known contractor.

City Trust's Duties—Length of Property Leases

The City Trust is charged with the responsibility both of administering the city's properties and investing municipal funds set aside as a reserve to meet the payment of outstanding debentures. It has used good judgment in these matters. The city's total debt has been reduced by hundreds of thousands of dollars during recent years. In 1938 it was $4,126,158. Against this there was a sinking-fund of $2,179,134. In addition, the Commission had accumulated a surplus of $337,443 above the city's debenture requirements.

Slightly over $1,000,000 of the bonds held by the Commission are issued by the city of Peterborough. Some of these bonds were sold years ago, when interest rates ranged as high as 5 and 6 per cent. Thus the city is paying this (now) high rate of interest indirectly to itself through the City Trust Commission. Within the past year a small part of the Commission's surplus was turned over to the city in order to keep down the tax rate.

There is a feeling in some quarters that 21-year leases are too long. One of the arguments advanced in support of such leases is that the tenants are required to maintain the properties in good repair and therefore are entitled to long leases. As the growth of population has been slow but steady, there have not been the sudden increases in real estate values that occur where the growth of population is more rapid. For this reason there has not been as much criticism concerning the length of the leases as otherwise would have been the case. The citizens of Peterborough are well satisfied with the administration of its properties given by the City Trust Commission.

1940 Urban and Rural Population Classified by Size of Place

IN 1940 23.9 per cent of the population of the United States lived in urban places of 5,000 to 100,000 persons as compared with 22.7 per cent in 1930, according to final figures from the Sixteenth Census released May 31, 1941, by Director J. C. Capt of the Bureau of the Census, Department of Commerce. Increased proportions in this size group are the major factor in the net gain in total urban population from 56.2 to 56.5 per cent.

In 1940 12.1 per cent of the Nation's population were living in the five largest cities of 1,000,000 or more. The proportion living in large cities of 100,000 and over declined from 29.6 per cent in 1930 to 28.9 per cent in 1940, a reversal of the previous decade's increase from 25.9 per cent in 1920. The percentage accounted for by urban places of the smallest size (2,500 to 5,000) remained unchanged from the 1930 figure of 3.8 per cent.

There were 3,464 urban places in the United States in 1940, as compared with 3,165 in 1930. These were mainly incorporated places of 2,500 or more with a few unincorporated areas (townships, etc.) that were classified as urban on the basis of special qualifications such as extreme density of population. The increase in the number of urban places is the net result of the addition of 344 new places in the 1940 data and the dropping of 45 places from the 1930 list. Most of the 344 new urban places were incorporated places that attained a population of 2,500 or more during the decade and thus qualified as urban, but 20 of them were places not incorporated until after 1930. Of the 45 places taken off the urban list most were dropped because of decreases to below the 2,500 limit, but a few disappeared through annexation to other urban places or disincorporation.

POPULATION IN GROUPS OF PLACES CLASSIFIED ACCORDING TO SIZE, AND IN UNINCORPORATED RURAL TERRITORY, FOR THE UNITED STATES: 1940

Area and Class of Places	Number of Places	Population	Per Cent of Total Population
Continental United States	....	131,669,275	100.0
Urban territory	3,464	74,423,702	56.5
Places of 1,000,000 or more	5	15,910,866	12.1
Places of 500,000 to 1,000,000	9	6,456,959	4.9
Places of 250,000 to 500,000	23	7,827,514	5.9
Places of 100,000 to 250,000	55	7,792,650	5.9
Places of 50,000 to 100,000	107	7,343,917	5.6
Places of 25,000 to 50,000	213	7,417,093	5.6
Places of 10,000 to 25,000	665	9,966,898	7.6
Places of 5,000 to 10,000	965	6,681,894	5.1
Places of 2,500 to 5,000	1,422	5,025,911	3.8
Rural territory	....	57,245,573	43.5
Incorporated places of 1,000 to 2,500	3,206	5,027,954	3.8
Incorporated places under 1,000	10,082	4,315,956	3.3
Unincorporated territory	....	47,901,663	36.4

City Provides Better Baths for Manhattanites

By C. W. Williams
Assistant Commissioner of Borough Works, Manhattan

WHEN the present administration of the borough of Manhattan took office in January, 1938, Borough President Stanley M. Isaacs found under his jurisdiction a number of public bath-houses and comfort stations. The majority of these were 25 to 35 years old and in poor condition.

President Isaacs immediately undertook to improve them. Men and women attendants were placed in attractive uniforms, strict supervision was enforced, and a number of the buildings were rebuilt by a WPA project which it is hoped will be continued until all obsolete structures have been restored.

One such building, the bath on 109th Street near Second Avenue, built in 1905, is shown in accompanying photographs. It is of brick and contains 92 showers and 2 tubs in the male section, and 31 showers and 3 tubs in the female section.

No charge is made for the use of the bath, but patrons may purchase soap and rent towels for a few cents. As the more elderly patrons, of whom there are a great many, objected to open gang shower arrangements, which could have been installed more economically, it was decided to locate the showers in individual compartments. The dressing space in each compartment contains a raised tile platform. The bather can step on this platform after leaving the shower, and thus is provided with a protected area in which to dress, which is dry not only on all sides but under foot as well. This obviates the use of newspapers which patrons formerly spread over the floor to take up some of the water that found its way out of the shower compartment —one of the worst nuisances and most difficult practices to combat that the department encountered.

The exterior and partition walls of the cubicles are of marble, and the doors consist of Transite sheets fastened to wood honeycomb grids. These doors are light but strong, and stand up well in service.

NEW CONSTRUCTION ADDS ENJOYMENT TO NEW YORK CITY'S PUBLIC BATHS

Upper views show men's and women's shower rooms as they were; lower views as they are. The non-slip tile on the new floors was made by the American Franklin Olean Co. The skylight consists of prismatic glass blocks manufactured by the Owens-Illinois Glass Co. for the American 3-Way Luxter Prism Co., Inc., of New York and Chicago

The building was in very bad condition. The roof needed replacing, and the old-fashioned skylights, entirely unsuitable to the moist atmosphere of a public bath, were so far gone that they could not be repaired. In the shower compartments, the first and second floors leaked, and the cement finish was cracked and rough and difficult to keep clean. The marble partitions in the shower compartments were stained and disintegrating. The plumbing and heating equipment needed to be overhauled, the forced ventilating system had long before stopped operating.

Reconstruction consisted of the demolition of all floors, arches, and roofs, as well as the front wall of the upper floor. Entirely new plumbing, steam heating, ventilating and electrical piping, ducts, conduit, and wiring were put in. The shower compartments were laid out back to back with a space for a pipe gallery between, as shown in one of the photographs. All the black-iron water pipe was replaced with brass pipe.

After a great deal of study, it was decided to install two barrel vaulted glass block and concrete grid skylights. These appeared to be better suited to operating conditions than any other type. One skylight is shown in a photograph. Thermeg semi-vacuum glass blocks, with wire reinforcements in the top plate, were used in the skylight. These blocks were set into a continuous interlaced bronze frame em-

bedded in a two-way reinforced-concrete supporting grid. All materials entering into the construction are rustproof, and it is expected that the skylight will last the life of the building with little or no expense for maintenance. As this type of skylight has approximately three times the insulating value of the original metal-type skylights, it will reduce winter heat losses with an appreciable saving in coal consumption. It has also helped, together with an adequate ventilation system, to keep condensation at a minimum, and the entire building, even operating at capacity, is free from humidity.

Heating is by convector-type radiators, recessed into the walls, and ventilation is by means of ducts concealed in the walls and leading to the fan room on the roof.

The interior was completely refinished and brought up to date, with walls of marble, glazed terra-cotta, ceramic tile and cement plaster, and floors of non-slip and quarry tile. The exterior is new above the first floor and is of brick and limestone with a new entrance feature of limestone pilasters and pediment framing aluminum doors.

The general remodeling program is under the direction of Commissioner Walter D. Binger and Chief Engineer Lester C. Hammond of Borough President Isaacs' staff. Ralph F. Lewis has been engineer and Abraham I. Goldberg architect in direct charge of the work for the borough. For the WPA, David Standley was Director of Operations in the borough of Manhattan.

"Time on Their Hands"

THE impoverished recreational and leisure-time life of young America, in spite of such facilities as 20,000 motion picture theaters, 17,000 daily radio programs, 6,000 public libraries, 1,395 state-owned outdoor recreation areas, and 200,000,000 acres of national parks and forests, is delineated in "Time on Their Hands: A Report on Leisure, Recreation and Young People," made to the American Youth Commission of the American Council on Education by C. Gilbert Wrenn, Professor of Educational Psychology, University of Minnesota, and D. L. Harley, Commission staff member.*

Certain fundamental beliefs are set forth by the authors. They are:

1. That in all recreational planning for youth the determining factor should be the needs of young people themselves rather than the functional structure of existing agencies.

2. That greatest possible use should be made of existing facilities and the fullest measure of coordination be effected among them.

3. That broad-scale recreational planning is urgently required at every level of recreational administration—community, state and national government.

"If we consider the wants expressed by youth against the background of fundamental social changes of the present century and in the light of known psychological facts about young people, we can arrive at a kind of inventory of the unmet recreational needs of youth. These needs fall into three main classes. In the first place, nearly all youth need more opportunities for certain essential types of leisure activities. Then there is need for guidance in the use of opportunities for cultural recreation. Finally, the problem of providing leisure-time activities for a number of groups which are especially underprivileged in recreation demands particular attention. . . . Among these are rural youth, youth of low-income families in general, Negro youth, girls, and the older adolescents."

* See page 115 of this issue.

"Public Recreation Programs a Poor Third"

Perhaps the most important fact about public recreation programs is that there are so few of them. Numerically they are a poor third among the means employed by society in its effort to guide the uses to which people put their leisure. The United States has 25,000 public high schools and 6,000 public libraries, but the number of communities reporting public recreation service is barely 1,300.

The National Recreation Association has set a standard of $3 per capita for services ordinarily provided by a municipal recreation department plus such other services as maintenance of general park areas, operation of museums, and provision of special events. In 1937 the standard was reached by only two of the 94 cities of 100,000 or more. The average per capita expenditure for this whole group of cities was $1.54—less than half of the standard.

The National Resources Planning Board recommends that municipalities of more than 10,000 population provide a minimum of one acre of park space for each 100 inhabitants. Yet throughout the country in 1930 there was an average of 208 persons to each acre of park space—in communities having parks. However, in 268 selected cities there was an acre of park available to an average of only 64 persons, showing that the recommended standard is not unreasonable.

A Federal subsidy to states to assist them in their attempt to conduct recreation programs is recommended by the authors. This subsidy could take the form of aid in education, in health activities, in extension of library services, and in such services as consultation, advice, research, demonstration, and other forms of promotion.

The state has a clear obligation to come to the assistance of the local communities, "since towns and counties and cities are the political creations of the state. In the field of recreation there are four types of activities that are undoubtedly appropriate for it to undertake: it should render advisory and promotion services to the local communities; it should accept the duty of equalizing recreational opportunity for young people and grant financial aid for recreational purposes where the need is essential; it should recognize that individuals everywhere will benefit from direct recreational services that require a broader organization than the local community gives scope for; it can designate an agency to take a broad view of the recreational requirements of the people of the state and develop plans for putting all the state's recreational resources to work to meet these requirements adequately."

It is at the local community level that the most effective work of organizing recreation for youth can be done, say the authors. They recommend that some communities try the device of a "public education authority" with jurisdiction over schools, libraries, playgrounds, and related provisions for recreation. "The principle governing relationships with other leisure organizations should be that *the independence of existing agencies is to be preserved so far as is consistent with the need for serving all youth*," they say. They urge participation and control by laymen, because "the history of public education in America provides evidence of the wisdom of this practice. In recreation as in education there is need for a clear-cut distinction between the policy-making responsibilities of the Board of Control and the executive functions of the professional worker or administrator."

Census Study of State and Local Public Debt: 1940

By C. E. RIGHTOR
Chief Statistician, Bureau of the Census,
Division of State and Local Government

IMPROVED economic conditions so increased state and local tax collections, according to a recent study by the Bureau of the Census, that short-term debt in 1940 was only half of what it was in 1932 when the depression-induced tax delinquency resulted in abnormally large temporary borrowings. Instead of $1,665,000,000 of temporary notes, as in 1932, state and local units were obligated for only $895,000,000 in 1940.

Long-term bonds, which are for improvements and relief, increased moderately. The long-term debt of $17,897,000,000 in 1932 rose 8 per cent to $19,330,000,000 in 1940. Additional to this increase was state and local borrowing made possible by debt retirements of $7,200,000,000 between these years. Total state and local public borrowings for capital outlays, or other long-term purposes, exceeded $8,600,000,000 during this period.

Adding long-term and short-term debt, the aggregate state and local obligations in 1940 were $20,225,000,000, contrasted with $19,562,000,000 in 1932, a rise of 3.4 per cent. Gross debt less sinking-funds rose 2.7 per cent from $17,698,000,000 in 1932 to $18,183,000,000 in 1940. On a per capita basis, however, this debt decreased 2.8 per cent from $142 in 1932 to $138 in 1940. Thus state and local public debt, after climbing upward in the three decades ending in 1932, leveled off to a relatively stationary total debt during this period.

Total Public Debt Trends, 1902-1940

America's public debt of $63,196,000,000 on June 30, 1940, represents the sum of widely different debts—Federal, state, and local. Of this total, the Federal debt was 68 per cent, $42,971,000,000; the state debt was 5.5 per cent, $3,505,000,000; and the local government share was 26.5 per cent, $16,720,000,000. Relative debt trends from 1902 to 1940 are portrayed in the accompanying graph for the three governmentals levels, Federal, state, and local. In years other than during periods affected by wars and depressions, state and local government debt assumes a more important role in the total public debt structure. In 1932, before the depression and the Federal-aid policy had seriously affected state and local government debt, local obligations were nearly 43 per cent and state obligations were 7.4 per cent of the total government debt.

Debt Variations by Types of Government

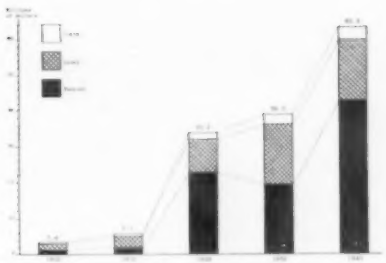
The Census Bureau's study, entitled "State and Local Government Debt: 1940," shows wide variations in debt movement from 1932 to 1940 according to types of government. State gross debt expanded nearly 22 per cent in this period in contrast to an imperceptible rise in local public debt.

The most striking debt change between 1932 and 1940 was the expansion of special district debt by 57 per cent to $2,562,000,000. Largest debts of this type were the $229,000,000 obligations of the Port of New York Authority, $169,000,000 debt of the Metropolitan Water District of Southern California, and $111,000,000 obligations of the Chicago Sanitary District.

Many special districts were created during the past decade as a borrowing vehicle for self-liquidating services. Outstanding among the new districts are the New York Triborough Bridge Authority, with a debt of $99,000,000, the Boston Metropolitan District, indebted to $53,000,000, and the Pennsylvania Turnpike Commission, which owed $42,000,000 in 1940.

Local housing authorities had incurred debt of $318,000,000 by June 30, 1940. Housing projects, for which this debt was incurred, are located in 31 states and the District of Columbia. Of the 150 local authorities floating housing loans, 12 are New Jersey city housing authorities, 11 are similar authorities in Texas, and 10 each are similar units in Florida, Georgia, and Ohio.

All classes of local government other than special districts experienced a debt decrease from 1932 to 1940. The municipal gross debt decline from $9,989,000,000 to $9,899,000,000 was the smallest proportionately, or 0.9 per cent. County gross debt shrank 15 per cent from $2,531,000,000 to $2,156,000,000. With the smallest debt of any local units, townships decreased their debt from $353,000,000 to $290,000,000, or 18 per cent. School district obligations of $2,176,000,000 in 1932 declined 17 per cent to $1,813,000,000 in 1940.



As indicated in this graph, the upward swing in state and local government debt during the first three decades of this century leveled off in a relatively stationary manner in the period of 1932-1940. "This fact," says the Census Bureau, "is reflected no matter which concept is used to express debt— gross debt, gross debt less sinking-funds, or either of these amounts expressed in terms of per capita obligations. The population increase of the continental United States even though only 5.5 per cent between 1932 and 1940, was in excess of the increase of debts of this type. In consequence, per capita state and local government gross debt less sinking-funds decreased 2.8 per cent from $142 in 1932 to $138 in 1940."

Urbanization Effect on Debt

The rate of debt change generally varied according to the population size of the local units. Gross debt of cities over 100,000 population rose 5.5 per cent, while the obligations of all other municipal population groups decreased. The decline was proportionately the largest, over 24 per cent, for municipalities under 2,500 population. Similarly, the smallest decline of county debt was for counties over 100,000 population, while the largest proportionately was for counties under 25,000 population. Among other local governments, debt tended to decrease in small units, in contrast to an increase—or less rate of decrease—in large units.

State and local government debt in the United States is mostly concentrated in a relatively few units of large population. Over 71 per cent of this debt is accounted for by the obligations of 335 state and local units each with a debt above $5,000,000. All other state and local units, which numbered 182,316 at the time of the latest decennial census (1932), accounted for less than 29 per cent of the total state and local public debt in 1940.

Water—Zero Hardness, for Baton Rouge Consumers

Deep-Well Water Provided in Uninterrupted Service by Two Stations in Louisiana's Capital City

THE purveyors of water to the citizens of Baton Rouge, capitol city of Louisiana, are modest in their approach to advertising the practically perfect water which nature has provided at depths of 1,600 and 1,800 feet beneath the city. The best boosters for the quality of the water are the consumers who leave for summer vacations and who are bound to find the water much harder than at home, no matter where they roam. Zero hardness, pH 7.4, and bacteria-count remarkably low, constitute the regular state and local analytical reports. Not satisfied, and believing that an ounce of prevention is worth ten thousand cures, a residual chlorine of 0.35 ppm is maintained at both pumping stations.

The population of Baton Rouge is 65,000, to which 4,250,000 gallons of water is delivered daily with peak pumpages of as great as 5,500,000 gallons per day in summer. The system, comprising 180 miles of cast iron and steel main and laterals and 15,000 services, is 99.98 per cent metered.

Sources of Supply

The deep wells which comprise the source of water for Baton Rouge are in two groups close by the two pumping stations. The older pumping station, known as the Lafayette Street station, has four flowing wells located nearby and going to an average depth of 1,850 feet. There are two 8-inch, one 6-inch, and one 4-inch, the latter being the oldest in the system. These wells flow into a 350,000-gallon reservoir and also a newer 1,000,000-gallon reservoir.

The second group of wells is in the northeast section of the city close to the Lula Avenue pumping station. There are five 8-inch wells in this group, going down to the 1,600-foot water-bearing stratum, and seven of the same size in the 1,800-foot stratum.

Lafayette Street Station

The older station, in the Baton Rouge system, is maintained as a standby or make-up station. Most of the water is pumped by the Lula Avenue station at uniform rates to maintain an advantageous electric demand charge, and unusual demands are taken care of by increasing the pumping at the Lafayette Street station.

The three pumps most used in this station are a Worthington 4,000-gpm centrifugal, driven by a 300-hp GE motor; a 1,200-gpm Worthington centrifugal, equipped with a Rensselaer non-slam check-valve, and driven by a 60-hp GE motor; and a Worthington 800-gpm centrifugal, driven by a 40-hp GE motor. Supplementing these three pumps, which because of their varying sizes are usually operated one at a time, are two older Fairbanks-Morse 2,250-gpm centrifugals, mounted on the same shaft with a 200-hp Fairbanks-Morse electric motor, and so piped that they may be used as single-stage pumps separately, or together as a 2-stage unit. They are ordinarily operated as single-stage pumps developing 50 to 60 pounds pressure, but if used 2-stage they develop between 100 and 125 pounds pressure for fire service. A Worthington 1-mgd steam pump is maintained as a standby, but since two sources of electric power are available it is believed that it will never be necessary to start this pump, because of the excellent planning whereby sufficient pumping capacity is available in the other pumps in the two stations. The standby pump is protected from dust by a glass-block partition and a double door leading into the station yard. The building itself, a brick structure, is painted with aluminum paint inside, and all hand wheels on the valves as well as the couplings between motors and pumps are painted a brilliant red. A small American Well Works sump pump with a Century electric motor is installed to take care of seepage into the pump station, which extends one story below ground level.

Mounted on the wall of the station is a large plan which clearly indicates all the piping in the station, and a similar wiring diagram is also available for quick reference. In order to minimize the amount of dust in the station, a ventilation blower circulates filtered air throughout the station, so that it is possible to keep all the doors closed to eliminate dust. All the windows are of glass block, to furnish the maximum of illumination and protection. The policy of the Baton Rouge Water Works Co., as stated by H. P. Connell, General Manager, is not to engage in spectacular reconstruction programs but continually to improve the property and service, so that at all times the consumers may have an assured supply at adequate pressure for domestic needs, and sufficient added pressure for fire service when required. Each pump is started by a Cutler-Hammer push-button relay to insure against overloading of the motors. A Republic flow meter records the delivery of water by the three Worthington centrifugal pumps at this station.

There are two switch panels in the station, a new General Electric panel for the two larger Worthington centrifugals, and another switchboard for all the other pumps, including the smallest of the Worthington pumps. Three Crosby gages are located close to the three Worthington centrifugals, one showing the pressure for each of the two larger pumps, and the other a

vacuum gage for the same two pumps.

The older switchboard is equipped with Westinghouse controls and carries the two incoming 2,300-volt lines, which are two separate circuits from the same generating station. On a panel board over the engineer's desk are a Crosby dial pressure gage and a Crosby recording gage on the system, to show the average pressure available for consumers. A Bristol liquid level gage shows the elevation of water in the reservoir to which the water is delivered by the flowing wells. An Esterline-Angus remote operating recording gage shows the elevation of water in the elevated steel storage tank on Highland Road near Louisiana State University, and a visual gage of the same make shows the elevation at a glance. A Cochrane flow meter is mounted on this same panel board to show the discharge from the two Fairbanks-Morse centrifugals. In the pump-room is located a Wallace & Tiernan vacuum sight feed chlorinator.

Lula Avenue Station

The Lula Avenue station is a modern brick structure, housing a group of seven automatically controlled pumps. While the concrete floor at the Lafayette Street station is red, the floor at the Lula Avenue station is green and the walls are protected by the same type of aluminum paint, and all hand wheels and couplings are in the same bright red.

The pumps at this station are cut in and out of service by five Cutler-Hammer automatic gage-type pressure regulators which operate on the pressure in the system. The three shift engineers, working 8 hours each, visit the Lula Avenue station once during each shift to make the necessary records and to check the operation of the automatic equipment.

The pumps in the Lula Avenue station comprise: an Allis-Chalmers 3,000-gpm centrifugal with an A-C 125-hp motor and equipped with a Rensselaer non-slam check-valve; a Worthington 900-gpm centrifugal with a 30-hp GE motor and, like all the remaining pumps in the station, equipped with a Grinnell check-valve; a Worthington 1,840-gpm centrifugal with a 60-hp GE motor; an Allis-Chalmers 800-gpm centrifugal with an A-C 20-hp motor; an A-C 2,500-gpm centrifugal with a 75-hp A-C motor; these pumps all being located at ground level. In a basement pit, giving a lower suction lift as a precaution against low water from the wells, are a 250-hp Fairbanks-Morse electric motor, driving two 2,500-gpm pumps which can be operated as two single-stage or as a pair of 2-stage pumps delivering 60- or 125-pound pressure to the system; and a similar pair of 1,600-gpm Fairbanks-Morse pumps with a 60-hp F-M motor.

The operation of the pumps is checked by a Bristol recording pressure gage and a U. S. Gauge Co. pressure gage and vacuum gage on the suction. A Cochrane flow meter records the discharge of the pumps, and a new Republic flow meter is being installed so that the discharge from the pumps on the ground floor may be registered distinct from the water delivered by those in the basement.

The transformers at the Lula Avenue station are located outside the building, while they are inside at the Lafayette Street station. For protection against an electric fire, a C-O Two electric fire extinguisher is installed, and there are also numerous Pyrene extinguishers throughout the building.

While no harmful bacteria have ever been found in the well water of the Baton Rouge water supply, every precaution is taken to assure that no harmful bacteria can possibly enter the system and reach the consumers. For this reason, as at the Lafayette Street station, a Wallace & Tiernan vacuum-type sight feed chlorinator is installed, and chlorine is applied to the suction of the pumps to maintain 0.35 ppm residual chlorine in the water as it is delivered to the distribution system. Platform scales are installed at the Lula Avenue station to carry two cylinders of Solvay liquid chlorine. As an economy measure, one of the rooms is being rebuilt as a chlorine room where 1-ton containers of chlorine may be used instead of the 150-pound cylinders. To furnish assurance that there will always be ample water supply to furnish the solution water for the chlorine, two Westco pumps with ½-hp Century motors are installed to boost the water pressure and therefore deliver the solution direct to the mains if necessary.

The switchboard at this newer station is fully equipped to show all the electrical characteristics, power consumed, power factor, and the operation of the individual motors as required. A 20-inch pipe, 25 feet high, to which has been welded 22 feet of horizontal pipe, is installed outside the station and in it is maintained about 55 pounds air pressure by a 1-cylinder Ingersoll-Rand compressor. This pipe acts as a surge tower on the line and prevents water-hammer at the station when the automatically controlled pumps are stopped.

The Baton Rouge Water Works Co. is operated under the direction of H. P. Connell, General Manager, with M. A. Gianelloni as Plant Operator and L. C. Eldridge as Superintendent of Distribution and Construction Engineer. A competent corps of office workers is maintained to handle the monthly billing and collections. The cycle system of billing is used with approximately the same number of meters read and bills sent out each day. This results in the maximum of economy and efficiency in office operation.

Safety Record Brings Lower Insurance Costs

A Conspicuously Favorable Safety Record has been established by public housing in the United States, and this record has led to substantial rate reductions on liability and fire coverages on blanket insurance policies covering occupied projects, Nathan Straus, Administrator of the United States Housing Authority, reports. In a study of accidents over a two-year period in 44 occupied projects it has been shown that there were only 244 in 20,000 homes. Loss ratios, instead of running to the normal 50 per cent of the premium dollar, have been running well under 15 per cent of the premium dollar.

"Safety starts on the drawing board," Administrator Straus says, "and the attention given this element at the very start of public housing projects means a constantly decreasing number of accidents."

Even little things are not overlooked. As undersized baseball diamonds have shown themselves particularly conducive to accidents, for example, they are eliminated from recreational areas. Downspouts are placed so that they do not pour water, which might freeze, over sidewalks. Open joints in sidewalks, in which high heels might catch, are avoided, as are slick floor finishes and highly reflective paint for wall surfaces.

Labeled and Unlabeled

Safes and Files in Actual Fires

"PROTECT City Records," suggested THE AMERICAN CITY on pages 42 and 43 of the January, 1939, issue, and offered a sound program for doing it.

Protect them with what? How trustworthy are modern insulated safes, files, fire-doors? How hazardous to valuable records are the older types of containers?

Because of lively present interest in more safely housing the numerous current and historic town documents, a recent detailed report provides useful information of fires involving 103 containers. The Safe Manufacturers National Association cooperated in obtaining these data of 1937-38 for the National Fire Protection Association.

The items covered comprise 73 safes, 20 vaults and 10 insulated letter files and cabinets. The report shows the performance of labeled safes bearing a definite performance rating, compared with safes having no specified rating. In no case did a labeled safe fail to preserve its contents for a period somewhat longer than its rated resistance and in no case was failure or destruction of contents complete, as frequently happened with unlabeled safes.

Record protection is too vital a matter to allow borderline cases to pass as satisfactory. Where the destruction of records had begun when the fire was extinguished, the container is recorded as having failed to preserve its contents. As a matter of fact, in several instances where only partial damage to the contents of old type safes and vaults was recorded, reports stated that firemen kept hose streams on the safes during the fire in an effort to prevent failure.

In many of the fires, records were lost because there was not sufficient safe or vault space in which to house vital and important records or other valuables. In most of the fires recorded, correspondence and records housed in uninsulated filing cabinets were a total loss.

Half of all failures of safes came with less than four hours' fire exposure. This would indicate that four-hour listed protection would have automatically eliminated more than one-half of the failures, since these were largely due to insufficient fire resistance of old-line safes or the use of label safes with only one-hour rating in locations where nothing less than two- or four-hour protection was justified by the hazard.

Once a fire has gained major headway, it is frequently impossible for the fire department to bring sufficient streams to reduce the duration of the fire, and in some cases the use of an inadequate number of streams may merely prolong the period of burning even if temperatures are somewhat reduced.

Performance of Vault Doors

Twenty vaults were involved in fire reported in this record. Apparently none of these vaults was equipped with doors labeled by Underwriters' Laboratories, Inc. This study does not describe the construction of the vault, but indicates the effect of the doors in the preservation of the contents. All these doors were of uninsulated steel or cast-iron construction and there is no indication that failure occurred due to transmission of heat through the vault walls before the doors failed. The contents were preserved intact in only half of the fires involving vaults.

Two interesting fires warrant special mention:

Weiser, Idaho.—Fire destroyed the Washington County Court-House, and the entire contents of the County Treasurer's vault were lost when the doors flew open when struck by a hose stream. The vault doors were believed to have been locked at the time of the fire. Losses in the vault besides important records included $5,000 in uninsured cash and checks.

Swainsboro, Ga.—Three small vaults containing county records were involved in a fire which destroyed the Emanuel County Court-House. The vaults had ½-inch plate-type doors which were closed during the fire. The doors did not fit tight. The Fire Department played hose streams directly on the vault doors in a successful attempt to prevent the complete destruction of the contents. A large amount of water was forced under and around the doors into the vaults. This water was turned to steam and severely damaged all the contents of the vaults. Some fire damage had also occurred in the vaults before the water was applied.

PHOTOGRAPH BY COURTESY OF DIEBOLD SAFE & LOCK CO.

Counter-Height 4-Hour Fire-Resistive Safe and a Cashgard Money Chest Built into the Counter of a Paying Teller's Cage at the Buffalo, N. Y., City Hall

Sewage-Gas Utilization for Heat and Power

Growth of Use, and Economies, Make Plant a Real Utility

By M. W. Tatlock
Superintendent,
Sewage-Treatment Plant,
Dayton, Ohio

SEWAGE gas is a by-product of the digestion of fresh sludge. This may be accomplished either in Imhoff tanks or in separate sludge digestion tanks provided with devices for careful heat control, and either fixed or floating covers for retaining the gases produced by digestion. This collection and use of sewage gas has been a development of the present century. The first two-story sedimentation tanks —Imhoff tanks — were built at Recklinghausen - Ost, Germany, in 1916, while experiments with the collection of gas from heated digestion tanks were made in 1914 by the Emschergenossenschaft. Gas was first collected in 1923 on a large scale and delivered to the municipal gas system at the Essen-Rellingshausen plant. The Ruhrverband in 1927 utilized the sludge gas in Eserlohn and later at Essen-Rellingshausen for the generation of power for a biological treatment plant, and at the same time used the cooling water from the motors for heating the digestion tanks. Since that time in Germany, most sewage plants, including Imhoff tanks or separate digestion tanks, have installed gas collectors.

The first Imhoff tank in the United States was built in 1911 at Madison-Chatham, N. J., and, so far as the writer knows, the Imhoff tank at Dayton, Ohio, built in 1928, was the first one employing gas collection. Separate sludge digestion was first carried out at Baltimore in 1912. Heat was first applied in 1926 to a crude earthen separate sludge-digestion tank at Plainfield, N. J. The first heated sludge digestion tank, with the heating coils built in as an integral part of the apparatus, was built in 1928 at Antigo, Wis.

All Use of Sludge Gas Incidental

It is worthy of note that in the United States the development of the use of sewage gas has been an incidental thing. Gas collection was often provided, but the value of the gas evidently was not recognized, because no provisions were made for its use. The Imhoff tank installation at Dayton included gas collection as an odor-control device and only provided for its use as fuel for burning screenings, and in the laboratory, with the remainder burned as waste. The value of this excess gas was recognized soon after plant operation began, and gas burners were installed in the heating furnaces of the plant buildings. It was also piped to the club house on the nearby municipal golf course and to two residences on city-owned property, where the tenants working at the treatment plant pay $24 per year for all the fuel they burn for both cooking and heating. The development of the sludge fertilizer business has been possible because of this source of fuel, and the latest improvement in the construction of a Nichols basket-grate garbage-refuse incinerator at the sewage plant was possible because of the excess gas supply available for fuel.

The use of sewage gas for heating plant buildings, for heating the digesters, and for burning screenings, has been common practice since collection was first attempted, but its general use in internal-combustion engines is quite recent. Although there is the record of an enterprising engineer in New South Wales, Australia, experimenting with a small engine operating on septic-tank gas about 1906; and another record of similar experiments in Bombay and Singapore, which were not entirely successful, but which were taken up in 1921 and brought to a satisfactory conclusion in 1923 by Whitehead, at Birmingham, England, the real development of this use of gas began in the United States in 1933, when the first sewage-gas engine was installed at Springfield, Ill., by Walraven.

This Springfield installation was a 6-cylinder engine rated at 177 indicated horsepower at 514 rpm with 65 pounds mean effective pressure. By 1936, however, Springfield had dropped from first to fourth place as far as the size of gas engines at sewage-treatment plants was concerned. In this year New York City was installing three units of 300 hp each in its Coney Island plant; Peoria, Ill., had engines totaling 835 hp in service; and Topeka, Kans., was installing 600-hp units. By 1936 Springfield had increased its original installation to 337 hp to establish its fourth place, and there followed Durham, N. C., and Cedar Rapids, Iowa, with 300 hp each. This type of installation has developed to the point that its use is common practice in both small and large plants. The installation in New York City's Tallman Island plant is the largest to date, 2,300 hp.

Careful Studies Boomed Use

The first use of gas as engine fuel at Springfield was not contemplated in the original installation. It is probable that the rapid development of this use of sewage gas is due to the fact that Mr. Walraven carefully worked out all the details

of its use and was very accurate and conservative in his first reports of the work. He knew, before the engine was purchased and installed, not only the average amount of gas collected but also the amount for the minimum day and week; he knew the analysis of the gas and its maximum and minimum Btu values; he knew the hydrogen sulphide content of the gas and whether it was safe for use without scrubbing; he knew the characteristics of his plant power load and its cost, and that the contemplated installation would carry that load. In other words, the installation was designed and installed around definite engineering facts, not guesswork, and he may well feel proud that the infant with which he pioneered has grown into such a lusty child.

The entire cost of the Springfield installation, including the engine, the heat salvage equipment, one Downs floating cover for the digestion tank, and a 23,000-cubic-foot gas holder, was $15,728. During the first nine months of 1934, this equipment showed a saving of 80,500 kwh per month, or almost one-half the entire cost of installation, if the cost of electricity is figured at one cent per kwh. The operating cost of the equipment was reported as being less than $100 per month during this time.

The Value of Sewage Gas

The value of any commodity is determined by both quality and quantity. Since sewage gas is a product of biological composition of sewage sludge and there is no uniformity in either quality or quantity of this source of supply, both the quality and the quantity of sewage gas must necessarily be variable. Records indicate variations in volume from less than 0.50 to more than 1.50 cubic feet per capita per day, with 0.80-cubic-foot as a reasonable average. The heat values range from a high of 700 Btu to a low of 500 Btu, an average of 600 Btu being an accepted figure for general use. An average of many analyses of sewage gas composition shows the following:

Methane	65 per cent
Carbon dioxide	30 " "
Nitrogen	4 " "
Other gases	1 " "
Hydrogen sulphide	traces

On this basis the gas from a city of 100,000 population has a potential value of $17,000 per year calculated as follows: 100,000 population producing 0.80-cubic-foot per capita per day will furnish 80,000 cubic feet of gas daily. This volume of gas at 600 Btu per cubic foot will furnish a total of 48,000,000 Btu daily. Since 3,413 Btu is equivalent to 1 kwh electric energy, 48,000,000 Btu are equivalent to 14,050 kwh daily. If an over-all efficiency of 33 per cent through the conversion process from gas to electric power is assumed, the net daily power produced is 4,648 kwh, or 1,700,000 kwh per year. On the assumption that power can be purchased at one cent per kwh, the value becomes $17,000. This is too large a sum of money to be wasted without some reasonable basis. In Dayton the use of gas for power is not economically feasible, because the power load is so variable from high to low that the interest on the capital cost of a unit large enough to carry the peak loads is higher than the cost of electrical energy at one cent per kwh.

Sewage Works Becomes a Public Utility

The development of power from sewage gase has added new proof that a municipal sewage-treatment plant is a public utility. Contracts have been made with private utilities which permit the treatment plant gas-driven generator to float on the power line, synchronized with the utility power, and metered so that any shortages in the treatment power may be drawn from the utility feed line, and any excess may be set back into the utility line. Another contract provides that the gas furnished from the sewage-treatment plant to the utility will be credited to the cost of electricity with an estimated monthly revenue of over $600.

The uses and values discussed are well-proved facts, but what the future of gas utilization has in store for America may be indicated by reports from war-torn countries of Europe. Both Germany and England are reported to be compressing methane gas from sewage-treatment plants into cylinders for use in motor trucks and buses; the General Italian Petroleum Co. has erected a great gas-generating plant in Genoa for converting sewage and garbage into methane which will be piped into homes for cooking; the Duke of Montrose suggested to the English House of Lords the possibility of utilizing methane gas from England's sewage works for the operation of the country's air armada.

The available facts regarding the utilization of sewage gas and sludge, a few of which have been touched upon in this discussion, only tend to convince the engineering profession of the necessity of keeping open minds as to the opportunities of the future. We must forget the word "impossible" lest we awaken tomorrow to find someone else doing what we say today cannot be done.

—ACKNOWLEDGMENT.—From a paper presented before the American Public Works Association Convention at Detroit, Mich.

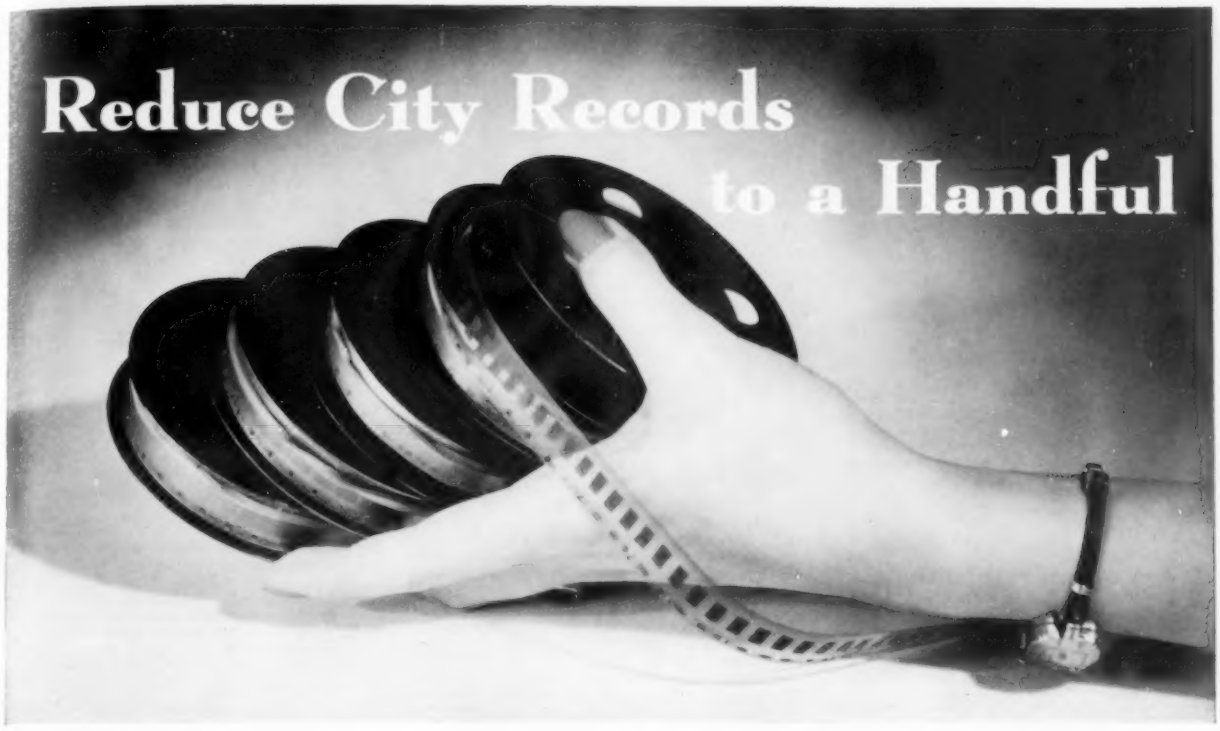
Summer Institutes for Civic-Commercial Organization Executives

DURING July and August in four widely scattered parts of the United States—Dallas, Texas, July 14-18; Missoula, Mont., July 28-August 1; Eugene, Ore., August 3-8; and Evanston, Ill., August 17-23.—summer institutes for civic-commercial and trade organization executives will be held. This method of secretarial training for chambers of commerce and similar organizations, inaugurated by the American City Bureau in 1915 and continued for seven years as the Summer School of Community Leadership, has since 1921 been conducted under the name of the National Institute for Commercial and Trade Organization Executives, sponsored by the Chamber of Commerce of the United States with the cooperation of Northwestern University, Stanford University and other educational institutions.

In a bulletin announcing these training opportunities, the National Chamber says:

"The old admonition to 'keep abreast of the times' assumes new importance to secretaries this year. Perhaps never before has it been as necessary to know what is going on outside the home town, to keep in touch with what other chambers are doing, and to maintain close state and national contacts, especially with those agencies having to do with defense. Thus, the schools for chamber executives which are to be held this summer should receive special attention, for they offer an unexcelled opportunity for secretaries throughout the entire country."

Reduce City Records to a Handful



THE essential value of past records is their ability to establish facts incontestably. In almost any community, one record in 50,000 may have historic or sentimental value, such as a George Washington deed or a Ralph Waldo Emerson water bill bearing the eminent signature These rare records of a worth-while past need never be destroyed; but the entire series of which they are items should be photographed and the 49,999 original documents then burned.

Not only should this be done with most past records, but it is now being done by many municipal governments. It is reasonable to predict that this will become universal practice. Why? Because 50,000 one-sheet letter-size documents piled one on another use 10 cubic feet of space, whereas the microfilm record of these documents, of equal legal value and more convenient to use, requires 0.2-cubic feet, or 1/50 of the space. When the old documents are in vaults or filing cabinets, they may take up 400 times the space of microfilms duplicating them. The legality, practicability, and inevitability of the method are established by the acts shown at the top of the next page, where Federal Government departments and the New York State municipalities are empowered to photograph original records and destroy the old originals, as the microfilm becomes the authorized and official original record.

Years ago the record vaults of the Canadian Government were filled with canceled government bonds. Instead of building additional vaults, the bonds were photographed and destroyed, leaving plenty of space in the existing vaults for other uses.

While the cost of filming records is more than made up by the saving in space and trouble, the actual out-of-pocket expense is almost unbelievably small. In the first place, no equipment has to be bought. Commercial Recordak Model B and the Model 10 Film Reader and Enlarger can be hired for $30 per month. Thus, on an annual basis, the equipment costs only about a dollar a day. The work can be performed by any employee, as the Recordak is simple and foolproof in its operation. The loading of the camera is so simple that a mistake cannot be made; there is obviously only one way to load it. If the operator forgets to insert the camera in the Recordak, the machine will not operate. If the operator happens to feed two documents into the machine—it stops. The present equipment is the result of thirteen years of finding out what is necessary for quick, orderly, low-cost production by the employee who is most readily available.

A six-drawer fire-resistant file for 5 x 8-inch cards contains 21,600 cards and occupies 4.6 square feet of floor space, and with aisle requirements 9 square feet. All these cards can be photographed on 4½ 100-foot rolls of 16 mm. film at a film cost of $12.38 and at labor and machine rental cost of $3.50, or $15.88 for the entire reproduction job. Each roll of film is 4 x 4 inches x 1 inch thick. Thus the space required for the film record of these 21,600 cards is 4 x 4 inches x 5 inches. The six-drawer cabinet will house film copies of 2,771,712 cards.

By the mere push of a little lever, any card or document will be flipped over and photographed on the back as well as the front, and ejected from the machine in its proper sequence. Documents up to 10½ inches in width and of any length can be photographed by this model. Film is never wasted, for an automatic mechanism advances only the exact amount of film required to photograph the particu-

lar document fed in at the moment. A counter records the number of documents microfilmed, and indexing dials record date and indexing symbols throughout the roll of film. These symbols make it possible to locate quickly the correct roll containing any document which it is desired to examine. The roll is placed in the Film Reader and rapidly unwound to the picture desired, which is enlarged to original size and automatically focussed. This machine will also make an exact photographic enlargement from the film picture in a matter of seconds. There are both Recordak and Reader models to suit various types, sizes, and volumes of municipal records. For instance, city engineers and public works and utility officials are interested in The Microfile Recordak, which photographs large maps and engineering drawings. Increasing use is made of photography for making durable reproductions of pencil drawings, eliminating the laborious and costly tracing operation.

All cities will do well to take a look at their records with an eye to good riddance of the bulky old originals and wherever possible for past and current records, to use space- and time-saving film rolls.

FEDERAL GOVERNMENT

(PUBLIC—No. 788—76th CONGRESS)
(CHAPTER 727—3d SESSION)
(H. R. 10026)
AN ACT

To provide for the disposition of certain photographed records of the United States Government, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That whenever any agency of the United States Government shall have photographed or microphotographed all or any part of the records kept by or in the agency in a manner and on film that complies with the minimum standards of quality approved for permanent photographic records by the National Bureau of Standards, and whenever such photographs or microphotographs shall be placed in conveniently accessible files and provision made for preserving, examining, and using the same, the head of such agency may, with the approval of the Archivist of the United States, cause the original records from which the photographs or microphotographs have been made or any part thereof to be disposed of according to methods prescribed by law, provided records of the same specific kind in the particular agency have been previously authorized for disposition by Congress.

SEC. 2. Photographs or microphotographs of any record photographed or microphotographed as herein provided shall have the same force and effect as the originals thereof would have had, and shall be treated as originals for the purpose of their admissibility in evidence. Duly certified or authenticated copies of such photographs or microphotographs shall be admitted in evidence equally with the original photographs or microphotographs.

Approved, September 24, 1940.

NEW YORK STATE

LAWS OF NEW YORK.—By Authority
CHAPTER 543

AN ACT to amend the public officers law, in relation to public records; reproduction of records on a film and the destruction thereof Became a law April 19, 1941, with the approval of the Governor.

§ 65-a. *Public records; reproduction of records on films and destruction thereof.* 1. Any public officer of the state may cause any or all records, papers or documents kept by him to be photographed, microphotographed or reproduced on film. Such photographic film shall be of durable material and the device used to reproduce such records on such film shall be one which accurately reproduces the original thereof in all details.

2. Such photographs, microphotographs or photographic film, shall be deemed to be an original record for all purposes, including introduction in evidence in all courts or administrative agencies. A transcript, exemplification or certified copy thereof shall, for all purposes recited herein, be deemed to be a transcript, exemplification, or certified copy of the original.

3. Whenever such photographs, microphotographs or reproductions on film shall be placed in conveniently accessible files and provisions made for preserving, examining and using the same, any such public officer may certify those facts to the head of the department, commission or board involved who shall have the power to authorize the destruction of such records, papers or documents, provided the consent of the commissioner of education is obtained pursuant to section eleven hundred and ninety-seven of the education law.

§ 2. This act shall take effect immediately.

NEW YORK STATE CITIES

LAWS OF NEW YORK.—By Authority
CHAPTER 688

AN ACT to amend the general municipal law, in relation to reproduction of records on film and the destruction of records so reproduced Became a law April 23, 1941, with the approval of the Governor.

§ 51-a. *Reproduction of records on films and destruction of records so reproduced.*

1. The head of any department, commission or board of a municipal corporation may cause any or all records kept by him or it, to be photographed, microphotographed or reproduced on film. Such photographic film shall be of durable material and the device used to reproduce such records on such film shall be one which accurately reproduces the original record in all details.

2. Such photographic film shall be deemed to be an original record for all purposes, including introduction in evidence in all courts or administrative agencies. A transcript, exemplification or certified copy thereof shall, for all purposes recited herein, be deemed to be a transcript, exemplification, or certified copy of the original.

3. Whenever such photographs or microphotographs or reproductions on films shall be placed in conveniently accessible files and provisions made for preserving, examining and using the same, the said head of a department, commission or board may certify those facts to the head of such municipal corporation who shall have the power to authorize the destruction of such records or papers, pursuant to section eleven hundred ninety-seven of the education law.

§ 2. This act shall take effect immediately.

Above and in the preceding column are given laws permitting photographing of public records and destruction of the original records

Local Government Is News —VII

(*Continued from page 66*)

or "unsatisfactory. The Bureau is a service agency both to citizens and to the city departments. Central control is established through a reporting system by the department to the Bureau. If action is not taken within a five-day period by the department concerned, a follow-up comes from the Bureau to the department on which a report of progress must be made.[2]

Beyond the immediate and direct contacts, informal and formal, between city employees and the public, city hall can do much to stimulate citizen contact with, and interest in, the administration's problems and policies. It is not impossible for citizens to be brought into direct relations with the making and carrying out of policy. This sort of contact is most helpful in giving the citizen a sense of partnership in the conduct of public affairs. In Berkeley, Calif., for instance, Mayor Frank Gaines invites ten citizens to attend each council meeting "as fellow stockholders in the business of Berkeley." These invitations are personally issued, and the response in increased interest in, and cooperation with, city hall has been gratifying. In Chicago the Board of Education, with the assistance of the WPA, conducted a series of "Know Your Government" tours which covered 36 municipal departments.

Even without such public meetings, city departments can find out by questionnaires what citizens think about proposed policies. In Pittsburgh, Pa., for instance, the Police Department considered installing parking meters. It took a before-and-after poll of results. It is interesting to note that the percentage opposed to parking meters dropped after experience with their use.[3]

In Montclair, N. J., the budget committee of the Town Commission sent out a questionnaire to 9,000 of the town's taxpayers. The question sent was whether to reduce the budget or to utilize some of the anticipated surplus for the reduction of the debt. Reply postcards were enclosed on which the citizens' preference could be shown. The return was about 30 per cent, and the vote was overwhelmingly in favor of retiring debt rather than reducing taxes.[4]

[2] Ayres Compton, "A New Public Relations Field—The Complaint Bureau," THE AMERICAN CITY, Mar., 1941, p. 50.

[3] THE AMERICAN CITY, Dec., 1939, p. 63.

[4] THE AMERICAN CITY, Mar., 1940, p. 55.

Honolulu's Water System

(Continued from page 58)

Consumers' Services and Meters

Metered services have increased in the past decade from 17,507 in 1931, when 491 were added to the system, to 23,956 at the close of 1940, during which the increase was 1,428. Every service in the system is metered, so the consumers pay for the exact amount of water that is delivered to them, except for four flat rates and twenty-five fire sprinkler systems which are handled on a service charge basis. Three of the flat rates apply to three other Departments of the municipal government, and the fourth, which antedates the creation of the Board of Water Supply, was granted in consideration of a right-of-way surrender.

A system of meter tests, designed to subject each meter to examination once in five years regardless of its performance, is working satisfactorily, although the schedule was somewhat disrupted in the past two years because of the transfer of the meter offices and shops into the new Board of Water Supply buildings. Special meter tests are made whenever they are requested by water users, and when their desirability is otherwise indicated.

The water rates for Honolulu were published in the April, 1941, issue of THE AMERICAN CITY, on page 9.

Technically trained men in the Service and Meter Division make special studies of consumer problems, including the detection of leaks and other causes of waste within the water users' properties, in the interest of conservation and as a means of maintaining satisfactory public relations.

Twenty service routes are maintained to enable a crew of five meter readers to cover the same ground at the same time each month. The routes as originally laid out have been satisfactory until recently, but now the growth of the city requires that they be revised. This is expected to be accomplished by 1942.

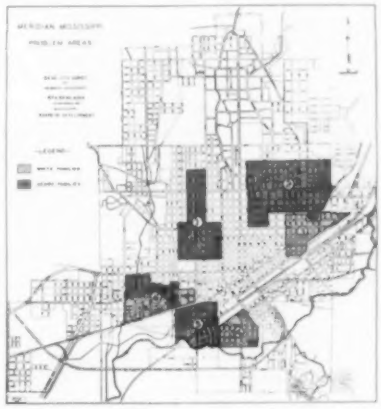
Maps of Problem Areas

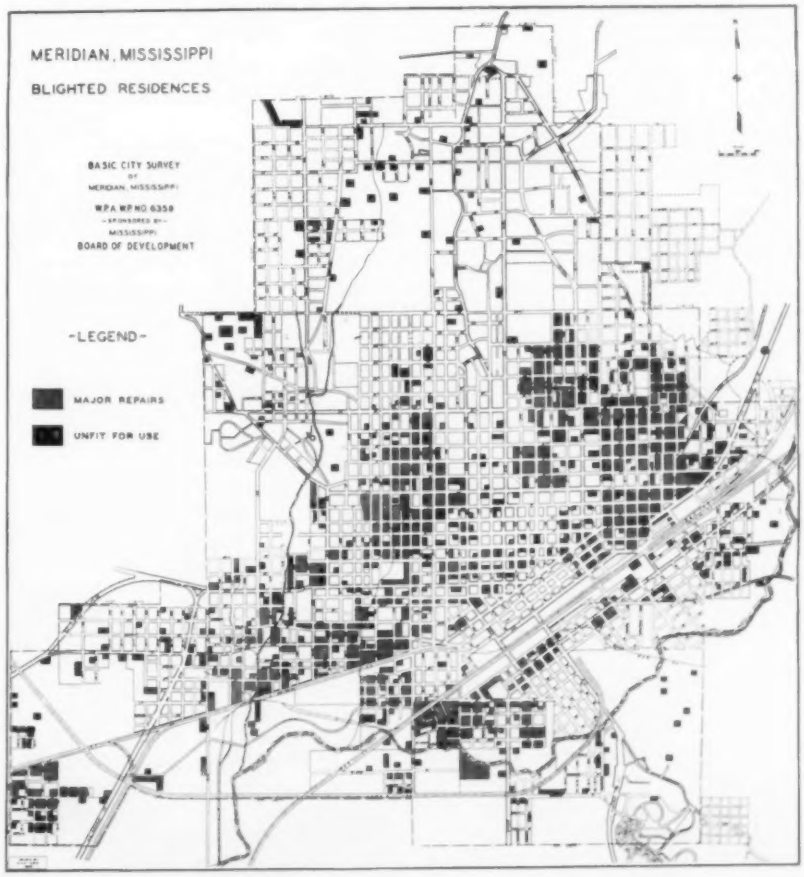
THE Final Report of the Basic Comprehensive City Survey of Meridian, Miss., dated December, 1940, and recently released, contains an admirable series of maps, two of which are here reproduced on smaller scales. They show problem areas and blighted residences in the city. The other maps show: land uses; residential uses; condition of commercial and industrial buildings; height of buildings—residential and non-residential; vacant and undeveloped property; tax assessments; water supply; sanitary sewerage; storm sewerage; gas service; electric service; telephone service; transportation facilities; type of pavement; condition of streets; births—1934 and 1939; deaths—1934 and 1939; communicable diseases—1934 and 1939; home ownership, 1940; population distribution, direct relief—commodities; and relief agency clients. Says the report:

"There are six distinct 'problem areas' within the city of Meridian. "These problem areas were found after the maps of the condition of dwellings had been prepared, showing the location of dwellings in need of major repairs or unfit for use. Only those areas where such blighted dwellings were found to be most numerous were selected for the Problem Areas Map, included in this report.

"These areas are principally the result of insufficient regulation of the construction of cheap dwellings for families with low incomes. While most of these blighted areas are now occupied by negroes, there are two of these areas occupied by white families and a third occupied by a mixture of white and negro families. Furthermore, the deterioration of the dwellings in these problem areas has been accelerated by the invasion of objectionable commercial and industrial uses.

"Unfortunately, these problem areas have grown in recent years and have resulted in a serious housing problem.





To Get Intelligent Planning Done

Excerpts from Three Papers on "Planning as an Administrative Process," Presented in Philadelphia, May, 1941, at the National Conference on Planning

By Russell Van Nest Black

Consultant, New Jersey and Pennsylvania State Planning Boards

PLANNING is not a single process, but two processes—two processes quite distinct in technique, no matter how interwoven they may be in practice. One is the technical process of making plans and of keeping them up to date. The other is the administrative process of maintaining the integrity of the plan and of putting the plan into effect. As the representative of government, the chief administrator of a city may be equally responsible for having plans made and for seeing that they are carried out. But this does not alter the fact that the actual preparation of plans is and must remain a technical and not an administrative process. Each of the two processes must be in full cognizance of the needs and limitations of the other, but each, in its operation, requires application of its own peculiar technique. . . .

Some people seem to think that we would get farther with planning, faster, if we threw the planning commission overboard and seated the planning function more directly in the government, either in the form of a planning department or of a single planning official, directly responsible in either case to the chief executive. The proponents of this form of planning organization contend that the planning commission, in its ivory tower, is so far removed from the regular processes of government that its approach is likely to be unrealistic; that such of its ideas as are sound are unlikely to get through to the responsible government; and that, being to some extent a competitor in the production of ideas, it is more likely to engender antagonism than the spirit of cooperation necessary to the acceptance of commission proposals. There is the further contention that the planning-commission approach, justifiable in the earlier years, has served its purpose—that planning has now come of age and should assume its rank in the front line of government without more coddling by glorified groups of citizens.

Undoubtedly there is ground for such criticism of the planning commission. At the same time it may be well to remind ourselves that in planning, as well as with any other phase of government, the form of organization is less important than the kind of men who are doing the job. We grow impatient with planning's slow progress and perhaps too quickly assume that there is something wrong with the tools. And it is always easier and more agreeable to place the blame upon the mechanics of the thing than upon the people responsible, who, in this case, are ourselves—the planners, the planning commissioners, and the responsible governmental officials. None of us are too competent, because good planning is an involved and difficult job. . . .

I am sure, therefore, that back of many planning failures lies much more than the misplacement of the planning function. Enough planning commissions have done effective jobs over sufficiently long periods of time to demonstrate that there is nothing impossible about the planning-commission set-up. On the other hand, I think it may be assumed that direct planning through the administrative process has always been available to local government without the benefit of special enabling legislation, and it is interesting to note that, in spite of the age-old freedom to plan, the instances of worth-while planning accomplishment by municipalities, outside the planning-commission approach, are exceedingly rare.

Conceding, however, certain theoretical advantages in the "streamlined" approach to planning, there remains the question of the requirements for placing it in successful operation. In my opinion there are two prerequisites to effective long-range planning in the absence of a planning commission. One is an extraordinarily competent staff planner or planning director, able and willing to stand up against destructive pressures both from within and from without the government. The other is an administration thoroughly convinced of the need for and the value of planning, well versed in its essential procedures, and ready to accept it as a regular and continuous function of government. But, under such rare circumstances, planning will succeed no matter what its position in the administrative structure.

The day may come when such conditions will have become the usual thing. Then, planning will have indeed arrived. In the meantime, however, wherever the staff is inexperienced or weak or the administration is only half convinced, I believe that the planning commission serves an essential function, and that without a commission to keep the planning concept alive not much planning will be done for long.

This is no brief for all planning commissions however composed or however minded. Some planning commissions, like some administrators and some planners, aren't worth their salt. A planning board without a proper concept of its job, and without the willingness or intelligence to do its job in a manner acceptable to a reasonable administration, is indeed worse than worthless; it exerts an influence positively destructive of planning locally and of planning generally.

It is my conclusion that the thing we most need is not a revolution in planning method, but better planning. Good planning will make its way no matter what the method.

By Donald C. Stone

Assistant Director in Charge of Administrative Management, Bureau of the Budget, Washington, D. C.

AS I view it, planning is no more than the gathering and analysis of pertinent information, and the drawing of a conclusion therefrom as to what a future course of action should be. Inasmuch as the problems which the administrator must resolve, or propose recommended solutions for, are of every conceivable kind, it is obvious that planning must deal with a wide variety of subject matter. The subject matter, however, always falls into two classes.

1. Substantive or technical subject matter with which the agency is dealing. Planning in this area is variously termed resource planning, program planning, technical research, etc.

2. The second class of subject matter is concerned with the development of sound organization, the method of staffing the organization, and the direction, coordination, and control of operations.

Planning in respect to such matters is often referred to as administrative or management planning. It is this latter kind with which we are primarily concerned in the present discussion. . . .

One of the reasons why planning bodies have not been utilized more generally by administrative officials, particularly in local governments, grows out of their frequent creation as supergovernmental agencies which serve as a check upon the administrator, or which tend to dominate administrative action while outside the stream of administration. . . .

It is of course essential that both program planners and administrative planners have the confidence and respect of operating officials they serve. Should they tend to assert themselves into the operating line and to make administrative decisions, they will reap a justified prejudice and distrust. On the other hand, it is essential for operating officials to understand and realize the significance of their actions in terms of the administrative process, their effect upon long-range programs, and the balance they are carrying in effective administration. In the press of daily operating responsibility, long-range program objectives and sound administrative management may be whittled away by the accumulation of hasty or unplanned decisions.

By John Nolen, Jr.
Director of Planning, National Capital Park and Planning Commission

DURING this period in which planning has come of age, its relations with the administrative agencies of government have become more and more realistic. At first, planning was sponsored by civic and commercial groups, and gradually independent advisory commissions were set up but with no specific powers or duties. Later, upon passage of state enabling acts, planning commissions were authorized to make comprehensive plans and even to control new subdivisions and to participate in the zoning process. Communities soon realized that much of what the planning commissions had proposed in their advisory capacity was having little influence on the major problems which the administrative agencies individually were attempting to solve. Meanwhile, expanding budgets worried taxpayers, large blighted areas became insolvent and tax-delinquent. Rigid budget and fiscal controls were set up, and while this reduced the pressure from (and on) the taxpayer, it did not solve any fundamental problems. The planning process was not functioning.

In spite of this experience, the reason for having a city planning commission to determine long-range policies for the community as a whole has not changed. . . . It might be said, though, that in our desire to free the planning agency from political dictation we have often severed any effective connection between the planning agency and politics through which alone the advice of the planning agency can be brought to realization. If planning has not been effective, that is more likely the reason; but it is not a reason inseparable from the advisory capacity of the planning agency. . . .

It would appear that the planning of the future for cities, towns, states and even on the national level, must be more positive and more objective than in the past—positive in the sense that it must be effective through closer tie-ins with administrative agencies and policy by an opportunity to submit reports and review budgets, and objective in the sense that we must continue to have planning agencies representative of the aims and objectives of the whole community in order that it may help to create the kind of community the community wants. This it could obviously not do if planning was merely a departmental, administrative function.

Factors Affecting Fruitful Local Planning

To the Editor of THE AMERICAN CITY:

Critical local problems and maladjustments, resulting from our extensive defense expansion, have focussed attention upon a need for local coordination and planning which has existed for many years. Whereas, in the recent past, planning was generally considered as unnecessary or undesirable—or not considered at all, today the word finds new favor on many lips in criticizing pre-emergency inadequacies of planning or in advocating intelligent forethought and action for both the immediate and the long-range future. Among those who have long maintained that effective planning at the myriad roots of our democracy is essential, there has recently been considerable debate as to the means and methods by which this should be done. The papers on planning as an administrative process, presented at the National Planning Conference in May, reflect this discussion.

Although each of these papers acknowledges the broadened scope of planning today and the important interdependence of planning and its administrative effectuation, one viewpoint recommends the incorporation of the local planning function into the regular "body" of municipal government, and the other favors the continuation of the more familiar semi-autonomous city planning commission.

The many interesting aspects of the current discussion have tended to overshadow two basic and all-important facts. The most fruitful form of local planning and its administration will depend (1) on the particular type of planning involved, and (2) on local conditions. In the case of soil conservation district planning and that carried on by agricultural land-use planning committees, for example, results have approved the means. In a municipality with enlightened government, so-called departmental planning would be desirable. But in the case of a city with a poor or corrupt government, the commission would in all probability constitute the best initial form for planning. At the Federal and state levels, the situation and needs are different again. Many of the points of application involve different considerations and are at different periods of social evolution, and will therefore require the best types and relationship of planning and administration for the best results in a given situation.

Of even greater importance is the general contemporary picture reflected in all the discussion papers. Each implies by indirection that the actual accomplishments of planning forethought are far too few. All recognize the wide gap between plans and planning accomplishment. In a country with many serious maladjustments and faced with the necessity of planning by world-wide developments which, regardless of the outcome of the present conflict, will challenge democratic efficiency, this represents a potentially serious situation. If planning is to continue to be confronted by a stone-wall barrier against its translation into action programs or by long delays in accomplishment, it would appear inevitable that increasing problems may lead to disastrous internal relationships, with the probability of eventual social and economic explosion.

The best planning forms are those which produce the best results, for the crucial job at hand is to *get* intelligent planning *done*. It can be done, but will it be done in time?

MELVILLE C. BRANCH, JR.
Princeton, N. J.

Forward Steps

Reported by Municipal Officials, Chamber of Commerce Executives, and Others

Labor Board Improves Toledo Labor Picture

TOLEDO, OHIO.—In 1940, with the completion of 5½ years of existence by the Toledo Industrial Peace Board, Toledo achieved a new record in labor relations. The 1940 annual report of the Board—a city-supported organization—reveals that there were in Toledo last year only 5 strikes, involving 473 workers. The Peace Board settled 16 major and 8 minor disputes, involving 5,191 workers, without any stoppage of work. Eight of these 24 disputes were developing into strikes when amicable adjustment was achieved through the peace machinery. Since its organization in 1935, the Board has been instrumental in settling, without any stoppage of work, a total of 181 disputes involving 36,244 employees, in 54 of which strikes had been definitely threatened. Progressive improvement and a gain in confidence of all parties has been reflected in the story of the Board. Its history is graphically portrayed in the accompanying table reproduced from the annual report.

TOLEDO INDUSTRIAL PEACE BOARD

SUMMARY OF OPERATIONS—JULY 5, 1935 TO DEC. 31, 1940

Cases	1935 July 5 to Dec. 31		1936		1937		1938		1939		1940		TOTAL	
	Disputes	Employees Involved	Disputes	Employees Involved	Disputes	Employees Involved	Disputes	Employees Involved	Disputes	Employees Involved	Disputes	Employees Involved	Disputes	Employees Involved
Settled without Strikes or Lockouts	7(a)	3102	16(b)	5712	66(c)	7797	Major: 18(d) Minor: 27 Total: 45	10908 333 11241	Major: 15(e) Minor: 8 Total: 23	3064 137 3201	Major: 16(f) Minor: 8 Total: 24	5129 42 5191	181(g)	36244
Strikes Settled	5	732	12	1760	14	2450	6	367	10	308	5	473	52	6090
Lockouts Settled					1	100							1	100
Disputes not Settled			3	200	14	1519	23	755	2	400	1	25	43	2899
Total Disputes Handled	12	3834	31	7672	95	11866	74	12363	35	3909	30	5689	277	45333

(a) includes 3 threatened strikes averted by settlement.
(b) includes 3 threatened strikes averted by settlement.
(c) includes 24 threatened strikes averted by settlement.
(d) includes 6 threatened strikes averted by settlement.
(e) includes 10 threatened strikes averted by settlement.
(f) includes 8 threatened strikes averted by settlement.
(g) includes 54 threatened strikes averted by settlement.
(h) Peace Board participated in these but did not settle; nearly all were settled by parties directly involved, without outside assistance.
NOTE. In addition, the Board each year has handled some 30 individual complaints, not shown in these tables nor outlined in this report.

The original idea for setting up the Toledo labor mediation organization came from Edward F. McGrady, then Assistant Secretary of Labor, who had been called to Toledo to mediate several difficult disputes. It gained strong public support when newspaper editors backed the plan whole-heartedly. Outstanding citizens have been among those serving voluntarily on the Board, which consists of three labor, three employer and three public members, who employ a full-time director. The total budget for 1940 was $6,275, of which $4,500 was paid for the director's salary, $1,560 for the stenographic clerk, and $215 for supplies, transportation and communication service. In many respects the new national Defense Labor Mediation Board set up by President Roosevelt follows the successful Toledo plan.

Virtually all of the work of the Industrial Peace Board is done quietly. However, the annual report of the director makes available without specific names a complete history of each dispute. In 1940, most of the issues involved in disputes were of the usual type—wage increase requests, vacations with pay, alleged unjustified discharges and alleged unsettled grievances, interpretation of agreements, picketing for various reasons, and, in a few cases, the recognition of unions. In the Federal reports of 1939 covering labor relations, Toledo stood 35th in the strike picture, but it is believed it will be much farther down the list on the 1940 record.

—From *Today in Toledo*, published by Toledo Associates.

Omaha Takes on New Life

OMAHA, NEBR.—Like many other cities, Omaha was hard hit by the depression. For many long years it was in the doldrums, just as was the whole of the United States. There's no need of going into details concerning unpleasant memories. Suffice to say, those years are gone, and we pray there will never be a recurrence of any like them; for the city of Omaha has had a new birth, and this is how it came about:

Recently the *Omaha World-Herald* sponsored a Contest for the Best Suggestions of Plans for the Progress and Development of the City of Omaha. The prizes were worth while: first prize, $1,000; second, $500; third, $200; fourth, $100; and four $50 prizes.

It was a wide-open, free-for-all contest, and you could submit as many suggestions as you pleased. One thousand entries were made and innumerable suggestions offered, prominent among which were:

1. Organization of a new, public-spirited council or assembly, representative of all classes of citizens, to consider and carry out all feasible plans for the general improvement of the city.
2. A public advertising campaign.
3. Encouragement of industrial development, particularly in the manufacture of articles from farm products.
4. A new City Auditorium or Civic Center.
5. Establishment of more rest rooms or comfort stations in the business district.
6. Development of Missouri River navigation.
7. Improvement of nearby Carter Lake as a pleasure resort.
8. Substitution of buses for street cars.
9. Patronage of local industries, stores and markets.
10. Fostering good-will and friendliness toward the people of the entire state and of adjoining states.
11. The holding of an annual Festival, to promote optimism and cheerfulness among all classes of citizens.
12. Community singing in the public parks.
13. Inducement to outside capital and industries to locate in Omaha, by donating land for factory sites, temporary remission of taxes, etc.
14. New leadership, and injection of more "new blood" into the veins of Omaha, by inducing more of the younger business men to participate in civic affairs, thus relieving the more prominent ones from being overburdened with such activities.
15. A job survey and appeal to all

employers to give employment, either temporary or permanent, to the unemployed.

16. Beautification of the city and its approaches through concerted planting of trees and flowers, elimination of weed patches, and the improvement of vacant lots and run-down buildings.

17. Abatement of the smoke nuisance.

18. An improved and uniform system of street marking.

19. Enlargement of the Omaha Airport.

20. Encouragement of the installation of air-conditioning systems in all stores, restaurants, office buildings, theaters and modern homes.

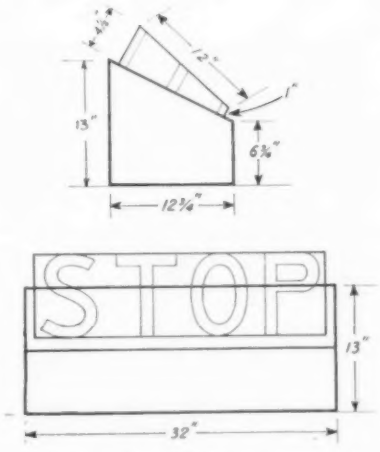
21. Improved recreational and cultural facilities, and the fostering of an optimistic and helpful attitude among all classes of citizens concerning the revival of Omaha.

From its inception the contest had a marked psychological effect upon the morale and spirit of the citizens. It started them to thinking, along optimistic and constructive lines, about what could be done for the improvement of conditions in their community. It became the main topic of conversation at the club, in the home and on the street. It was a common occurrence for one man to meet another and say: "Well, have you sent in your suggestions for the progress of Omaha?" and for the other to answer: "You bet I have; I've sent in a raft of them, and I'm going to get that $1,000 prize."

After the decision of the Contest-Judges and the awarding of the prizes, the *World-Herald* compiled and published a digest of the various suggestions. The contest has been productive of the most gratifying results, not only in a mental and spiritual way, but in the way of physical and material progress: Many of the suggestions have already been successfully carried out, notably the Festival, when men let their whiskers grow, or bought some and pasted them on, and women paraded the streets in long dresses, with pantalettes, sunbonnets, etc. Community "Sings" are regularly held in the public parks; the Chamber of Commerce, the Ak-Sar-Ben Association and other civic organizations, the City Administration, business men and citizens generally, have all entered into the spirit of progress; the Omaha Airport is being enlarged; stores have put on new fronts; new buildings and homes and a large bomber assembly plant for national defense are in course of construction; business and employment conditions have noticeably improved; and we're *all out* for a bigger and better city of Omaha!

WILL HATTEROTH.

Easily Visible and Attractive Stop-Sign, Coral Gables, Fla.



Showing Design and Measurements of Coral Gables Traffic Sign

Traffic Sign Designed by City Manager

CORAL GABLES, FLA.—A novel traffic sign has been designed by City Manager, A. B. Curry, of Coral Gables, and is in use in that city. On a solid concrete base, 32 inches long by 12¾ inches deep, 6¾ inches high in front and 13 inches high in the rear, appear at an angle which the eye cannot escape and against a blue background, the raised gold letters STOP. The reading surface projects 1 inch above the base in front and 4½ inches in the rear, and is 12 inches from front to rear.

Placed in a grassed area inside the curb, it catches the motorist's eye as effectively as a sign at or near eye level. The signs are made in the city's own cement utensil plant, along with flowerpots, park benches and low street-name signs. Their cost is trifling.

Mr. Curry is enthusiastic about the sign. He says: "It can't be knocked over or damaged by careless motorists. It is not, as disk signs are, a natural target for boys with stones, or 22's. It's proof against adult vandals unless armed with a crowbar or sledge."

It is not patented, and Manager Curry will gladly give further particulars.

THOMAS H. REED,
Municipal Consultant.

Houston Mobilizes to Meet Soldiers' Needs

HOUSTON, TEXAS.—A full-time Soldiers' Service Bureau to act as a clearing-house for all programs and activities relating to the health, welfare, and well-being of the 30,000-odd soldiers in the Army cantonments in this area has been opened by the Chamber of Commerce as a major contribution to national defense.

The program of local cooperation with Army officials was developed at the request of the commands of the three cantonments. Colonel R. C. Kuldell, former President of the Houston Chamber of Commerce, is chairman of the committee directing this work. Colonel Kuldell is also representing the sixty agencies included in the Council of Social Agencies.

This program represents a community-wide effort to provide wholesome recreation and amusement by the citizens of Houston for the soldiers both in their camps and while they are in Houston.

The Soldiers' Service Bureau also will coordinate community efforts on such matters as health protection both for the soldiers and the citizens. The Chamber of Commerce Health Committee has already taken action to have the city and the county set up a detention clinic for diseased women. The Chamber's Athletic Committee is designing athletic fields for the three camps and has agreed to raise funds to install lights at Ellington Field for

night play.

The Bureau will be prepared to provide information at any time to soldiers who are visiting in Houston, arrange entertainments both in the city and at the camps, assist churches and other organizations with affairs for the soldiers, and otherwise make the soldiers feel that the people of Houston are sincerely interested in their welfare.

The Program Analyzed

The following items were deemed necessary for consideration in developing a well-rounded program of cooperation with officials of Camp Wallace, Ellington Field, and Camp Hulen, by organizations in the city of Houston:

I. *Housing*
- (a) Survey of availability
  - 1. Registration
  - 2. Rentals
  - 3. Publicity
- (b) Rent control
  - 1. Effective measures
- (c) New construction
  - 1. Government aid
  - 2. Private capital

II. *Transportation*
- (a) Bus service
  - 1. To serve soldiers
  - 2. To serve citizens of Houston
- (b) Traffic regulations
  - 1. Routes in city
  - 2. State Highway Patrol cooperation in movement of Army traffic
  - 3. Police cooperation in movement of Army traffic

III. *Amusement and Recreation*
- (a) Theater cooperation
- (b) High-school football games
- (c) Texas League baseball games
  - 1. "Soldier Nights"
  - 2. Reduced admissions
- (d) Athletic events
  - 1. In Houston
  - 2. At camps
- (e) Supervised dances and socials
- (f) Sight-seeing trips
- (g) Magazines, etc.

IV. *Information Bureau*
- (a) Location
- (b) Financing
- (c) Staff
  - 1. General information
  - 2. Tickets
  - 3. Directions
  - 4. Rest rooms

V. *Policing*
- (a) Houston police
- (b) Sheriff
- (c) Military police
- (d) Basis of cooperation

VI. *Banking and Credit*
- (a) Banks
- (b) Merchants
  - 1. Retail Credit Men's Association
  - 2. Retail Merchants' Association

VII. *Health Measures*
- (a) Prophylactic stations
- (b) Clinic for diseased women
  - 1. City-county cooperation
- (c) Mosquito control
- (d) Food establishments
  - 1. Strict sanitary control

VIII. *Educational*
- (a) Night study opportunities
- (b) Correspondence courses
- (c) Library service

IX. *Churches*
- (a) Prepare complete list of churches
- (b) Publicity
- (c) Special transportation to services
- (d) Special church events

X. *"Make 'em Feel at Home" Activities*
- (a) Greeters
- (b) Local hostesses
- (c) Special entertainment at camps
- (d) Radio programs
- (e) Soldier-written columns in newspapers
- (f) Military Affairs Committee, Chamber of Commerce
- (g) Local organizations

GORDON H. TURRENTINE,
Public Relations Director.

Luray Singing Tower has a beautiful setting

Singing Tower Given to a Virginia Town

LURAY, VA.—The Luray Singing Tower of 47 bells was given to this Shenendoah Valley town, with an endowment to provide for its maintenance and for recitals in perpetuity, by Col. T. C. Northcott and his daughter, Mrs. Katherine Graves, in memory of Belle Brown Northcott, wife and mother. Housed in a native stone tower, it is located in view of the Blue Ridge Mountains. It was dedicated "with the hope that it may be of cultural value and provide pleasing entertainment not only to residents but also to the many travelers who visit this friendly town."

Although unknown to many Americans, the carillon has been a popular musical instrument in the Old World, where it originated at least 400 years ago. It has been said that "it is a folk-instrument—it sings with the people." Although it has been only in the last fifteen years that professional carillonneurs have practiced their art in this country, great advancement has been made: in 1922 the first carillon was erected in the New World, and today there are over forty fine instruments in the country.

Recitals by Luray's carillonneur, Charles T. Chapman, a pupil of Anton Brees, carillonneur of the Bok Singing Tower in Florida, are given daily (except Friday) at 3:00 P.M., from April 1 to November 30, and on Saturdays at 9:00 P.M. Week-day recitals are given for 30-minute periods; Sunday recitals for 45 minutes. There is no charge, and ample free parking space is provided.

The carillon is not played from a keyboard as in the case of the organ, but from a clavier of oak levers and pedals. The bells are hung stationary in a structural steel framework, and the clappers are connected by a system of transmission bars to the levers and pedals. The action is direct—that is, there is no pneumatic or electrical aid—and though this adds considerable difficulties to the playing, it gives the carillonneur a much greater range of dynamic expression than is possible with an electrically operated mechanism, and makes possible true artistic expression that ministers to the spiritual needs of the people.

ROBERT W. KEYSER,
Mayor.

Safe and Gay Hallowe'en in Many Cities

To the Editor of THE AMERICAN CITY:

We have noted in the June issue of THE AMERICAN CITY the request from W. V. Pflaum, Chief of Police, Piedmont, Calif., for information as to what cities throughout the country are doing to meet their Hallowe'en problem. In this connection we wonder if you are familiar with our recent bulletin, "The Community Celebrates Hallowe'en," a copy of which is going forward under separate cover.* This gives fairly detailed accounts as to how communities throughout the country have in different ways solved the "black destructive" problem.

CLARK FREDRIKSON,
Correspondence and Consultation Bureau,
National Recreation Association.

* See page 115 for listing of this publication.

For articles on National Defense in this issue, see pages 5, 43, 62 and 85.

Measures of Defense Against Aerial Attack

Vital Information in Case of Need

While devoting a considerable amount of space in recent issues to problems of national defense, THE AMERICAN CITY has endeavored to avoid taking an alarmist attitude in the present emergency. Notwithstanding the horrible destruction wrought by the war in Europe and on the high seas, we believe that bombing of any American city is still a remote contingency. Common sense, however, requires that municipal officials give rational forethought to possible eventualities, and that they have at hand for immediate consultation information which may prove of vital importance in case of aerial invasion.

It is for this reason that there is here reprinted from a new War Department bulletin the sections on protection of buildings and of utilities and industrial plants. This Bulletin No. 1 on "Civilian Defense: Protective Construction" has been prepared by the War Department with the assistance and advice of other Federal agencies. It is issued by the Division of State and Local Cooperation, Office for Emergency Management, and is for sale at 25 cents by the Superintendent of Documents, Washington, D. C. Other sections of the Bulletin discuss aerial attack as to weapons used, ballistics and effects of bombs; and there is quite a comprehensive discussion of air raid shelters, with numerous plans and specifications.

A. Protection of Buildings

FRAMED buildings of steel or reinforced concrete construction are relatively much less affected even by direct hits than are buildings of wall-bearing construction. Modern public, commercial, and industrial buildings are usually of steel or concrete framed construction and should withstand bombing very well.

Bomb fragments may pierce building walls where the thickness is less than that indicated by table 4, and light wall panels and windows can be destroyed easily by blast. Usually protection can be given by sandbag walls, which are very effective in stopping fragments. Figure 3 shows a sandbag wall recommended for protection of the first floor of a building. It should be noted, however, that in climates subject to normal rainfall and snow, untreated sandbags deteriorate very quickly and usually disintegrate in a few months if exposed to weather. Therefore, sandbags generally should be considered as a temporary expedient to be replaced by brick or concrete walls when possible.

There is little that can be done toward making a wall-bearing structure safe from bombing. Sandbag barricades may protect the contents from fragments of bombs detonating outside the structure but they cannot prevent demolition of the entire structure by blast. Buildings of this type often have wood floor systems which add to the fire hazard.

In the design of new buildings *specifically to resist bombing effects*, the vulnerability of wall-bearing structures practically precludes employment of such structures in all but exceptional cases, and it narrows the choice of structures to one where the frame is constructed of steel or reinforced concrete. If connections of the girders and columns are made strong and if the principle of continuity is followed, it is possible to design a building in which extensive collapse is very unlikely even under a direct hit of a very heavy bomb.[1]

The cost need not exceed materially that of a similar structure in the design of which no provision is made for the effects of bombs. Industrial structures with light roof covering should be designed, if possible, so that the destruction of one main member, such as a roof girder or column, will not overload the adjacent members to the extent that spreading collapse results. The dangers of collapse can be reduced considerably if the connections of the roof member to the column are designed strong enough to permit considerable distortion of the column or lateral displacement of its base without failure of the connection.

Wall panels of one- or two-story industrial type steel or concrete frame buildings should not be bonded to columns or other structural elements, since serious damage to the structure may result. The following paragraphs, quoted from a bulletin of the Department of Scientific and Industrial Research, are based on recent British experience in bombing raids.[2]

"The function of the external walls of a wartime building should be solely

[1] See Prof. J. F. Baker, "The Resistance to Collapse of Structure under Air Attack," *Journal* of the Institution of Civil Engineers (London), October, 1940.

[2] Department of Scientific and Industrial Research, General Principles of Wartime Building Bulletin No. 10 (London: His Majesty's Stationery Office, 1940), p. 6.

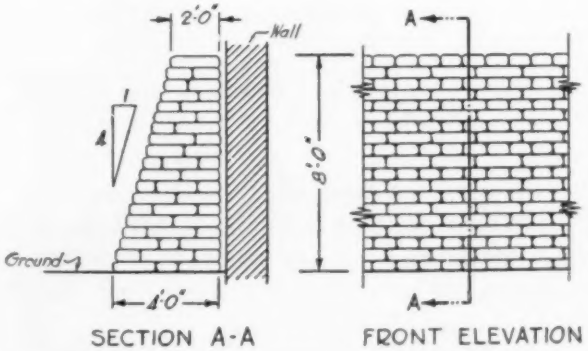


FIGURE 3. SANDBAG WALL TO RESIST PENETRATION BY SPLINTERS

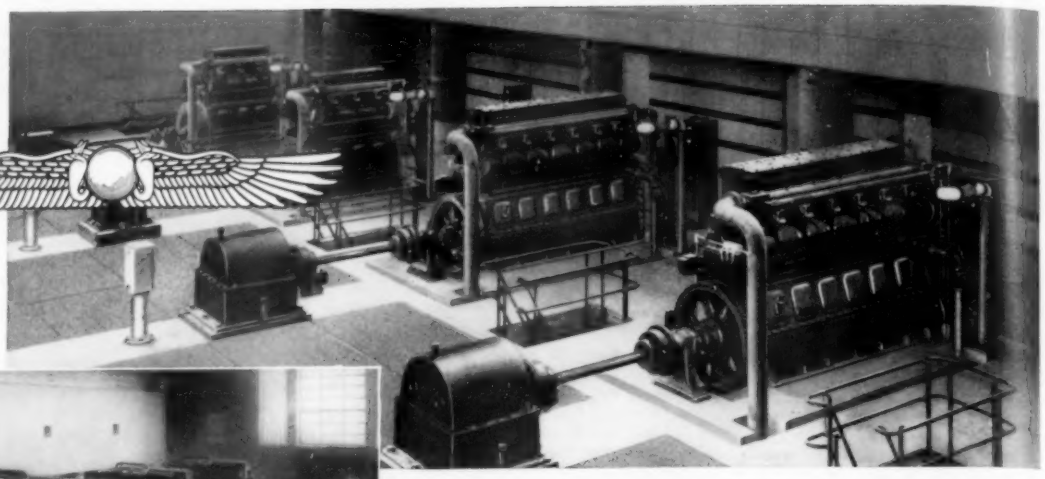
1. *An average size sandbag filled measures approximately 20" x 10" x 5", but any bag suitable for filling with earth or sand can be used for this purpose*
2. *If possible, an air space of about 2 inches should be left between the sandbag wall and the wall of building*

TABLE 4.—Thickness of various materials required for protection against fragments of a 500-pound bomb at a distance of 50 feet

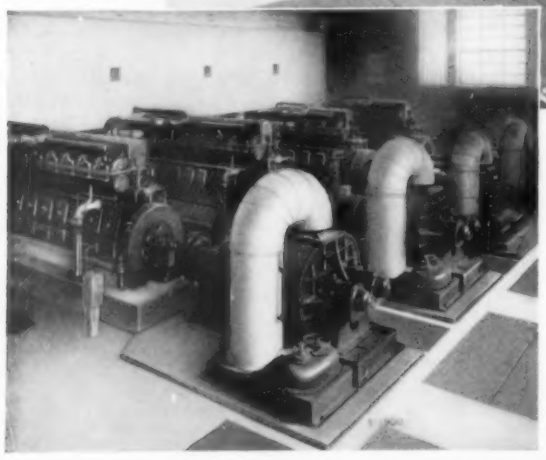
Material	Required thickness
Mild steel plate	1½ inches.
Brick wall [1]	13½ inches.
Plain concrete	15 inches.
Reinforced concrete [2]	12 inches.
Specially reinforced concrete [3]	10 inches.
Sand or earth revetment	2 feet, 6 inches.
Gravel or stones between wood sheathing or corrugated iron.	2 feet, 0 inches.

[1] Recent tests indicate that this figure may be somewhat reduced.
[2] Normal structural reinforcement.
[3] Reinforced to resist high local stresses in diagonal tension.

Equivalent protection would be given by these materials suitably combined in proportionate thicknesses. This table is not exhaustive and doubtless other materials could be shown to be equally effective for the purpose.



At Tallman's Island



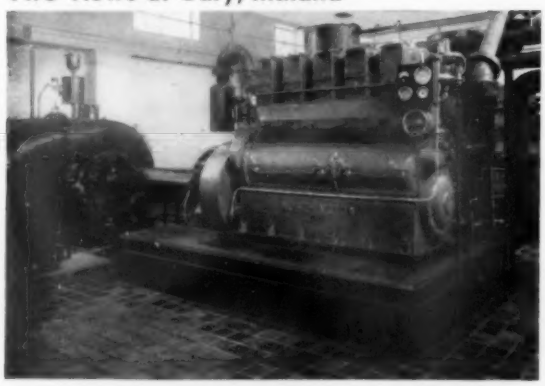
Representative of many outstanding Worthington installations are those at **TALLMAN'S ISLAND** *New York and at* **GARY, INDIANA.**

At **TALLMAN'S ISLAND,** *are two 360 hp. and two 180 hp. Worthington engines, operating on sludge gas, driving Worthington vertical centrifugal sewage pumps through Falk right angle gears. Also, at Tallman's Island, are two 845 hp. and two 460 hp. Worthington engines, operating on sludge gas, direct connected to Roots-Connersville air blowers for aeration service.*

At **GARY, INDIANA** *are three Worthington 24 inch centrifugal pumps, each of 20 MGD capacity, 35 feet TDH, driven by Worthington 175 hp. engines operating on sewage sludge gas. Also, two Worthington 20 inch centrifugal pumps of 15 MGD capacity, driven by 125 hp. Ideal synchronous motors. An installed capacity of 90 MGD, for handling raw sewage.*

WORTHINGTON EQUIPMENT for SEWAGE DISPOSAL

Two views at Gary, Indiana



. . . is contributing prominently to the solution of sewage plant problems.

Developments in the use of sewage gas engines find Worthington in a noteworthy position as evidenced by an extensive and constantly increasing list of successful installations.

And Worthington's service to the sewage disposal field includes not only sewage gas engines. Main raw sewage pumping units as well as pumping equipment for all auxiliary services will be found in a large percentage of our modern sewage disposal plants, including many of the most prominent installations.

WORTHINGTON PUMP AND MACHINERY CORPORATION

GE1-1 *General Offices:* **HARRISON, NEW JERSEY**

WORTHINGTON

to protect the plant and personnel against the weather and against the effects of near misses. Whatever walling material is used is liable to be extensively destroyed by near misses, but provided it is properly designed, it is possible to confine the damage to the walling material alone and to ensure that it does not involve the structural framework of the building.

"Cases have occurred in which panel walls built into the webs of steel stanchions [columns] have been subjected to severe blast and have bowed the stanchions [columns] out, shearing off their cap connections and producing collapse of the roof.

"The ideal wall construction therefore consists of panel walls giving the code standard of lateral protection built independent of the steel framework so as to ensure that in the event of a near miss, they are blown in without involving the steelwork. This independence can best be achieved by casing the steelwork in concrete not bonded to the wall panels * * *."

The protection against scattering of glass fragments of window or skylight glazing by adhesive treatment, such as muslin glued over the whole surface of glass, has proved effective. Any adhesive treatment should be extended over the frames surrounding the glass. Factories with glazed roofs present unusually dangerous hazards to workmen because of the possibility of fragments of glass falling within the factory. Chicken-wire nets may be installed overhead in the interior as near as possible to glazing or roof, to catch fragments of glass and other shattered roof coverings falling from the roof.

In the construction of new factories, skylights should be dispensed with, if practicable, and recourse had either to artificial lighting or to lighting from side windows.

B. Protection of Utilities and Industrial Plants

1. Utilities

The protection of utilities so as to permit continuation of service under air attacks is of paramount importance in maintaining industry and production.

Utility organizations in regions where there may be danger of attack should make plans for the following:

a. Continuation of electrical service and measures to be taken to minimize the effect of bombing.

b. Measures of defense in the construction of new power installations to minimize the effects of bombing.

a. *Continuation of Service and Protection of Existing Facilities.*—One of the best methods of providing continuation of service is that of having all sources of power interconnected so that even complete destruction of an important plant would result in the minimum interruption to the power supply. All vital control apparatus and conductors should be duplicated in so far as is practical and should be so arranged that in the event of destruction of one unit, its duplicate could be put immediately into service. Another protective measure, where feasible, is to have replacement units and parts of equipment strategically located and designed for rapid transportation to replace a partially destroyed element.

The general statements made previously as to the relative vulnerability of, and means of protection for, various structures may be applied to power-plant structures. Such buildings are generally of frame construction and of fire-resistant materials. A reinforced-concrete roof 5 inches thick is sufficient to prevent penetration of a 2-pound incendiary bomb. The walls should be thick enough to give protection against bomb fragments (see table 4). Where walls are of insufficient thickness, a sandbag, brick or concrete wall may be provided, in addition to the existing wall, to increase the protection. Large windows may be made less dangerous by closing part of the opening with sandbags, or preferably, with concrete or brick walls. Individual power units such as generators and turbines may be given protection by sandbag or brick protective walls around each unit.

Massive concrete dams suffer little or no damage by aerial bombardment. In certain cases, head gates and spillway gates with their operating mechanism, intake screens, or trash racks may be damaged; in these instances, a degree of protection may be provided by reinforced-concrete protective structures, although such installations are so varied that definite recommendations cannot be made.

High-tension lines are not easily destroyed or broken down by aerial bombing. Few direct hits can be made by enemy planes unless they have the most favorable conditions for attack and fly very low and along the transmission right-of-way. Even in such cases, direct hits resulting in the destruction of the steel towers seldom occur. Towers are sometimes damaged by fragments of exploding bombs, but in most cases this damage is not sufficient to interrupt the power supply.

The comparatively few interruptions of power supply on transmission lines, which are usually caused by damage to the conducting cables or insulators, may be repaired quickly and the broken insulators replaced. When towers happen to be destroyed by direct hits, usually service can be restored in a very short time by providing temporary lines. Multiple transmission lines having different routings or widely separated rights-of-way, and selective relay protection for the different circuits, will reduce the interruption of power service to a minimum.

b. *New Construction.*—New buildings of permanent construction which house important equipment or operations should be of framed, fire-resistant construction, with walls of sufficient thickness to resist fragments and roofs at least heavy enough to stop light incendiary bombs.

Power-plant machinery and other vital equipment should be given protection against fragments. Provision should be made for adequate fire fighting equipment, and for concrete fire walls or barriers to prevent such spread of fire as might happen when oil-filled transformers and switches are used.

The construction of outdoor stations should be arranged so that sectionalization or cutting-off of damaged sections may be done quickly and service restored over undamaged sections. A wider separation of the more vulnerable units, such as transformers, will serve to decrease the liability and extent of damage. Outdoor substations preferably should be of latticed angle-iron construction, and the transformers and oil switches may be protected by walls of concrete, brick, or sandbags as previously described.

These penstocks, gates, etc., which are particularly likely to be damaged, should have adequate control equipment and valves to localize the damage.

Outside flow line of equipment, including penstocks, oil piping, gas pipes, and other vital appurtenances of hydroelectric plants should be placed underground or in strongly constructed concrete ducts or tunnels, wherever this is feasible and financially practical.

Steam plants are probably more liable to injury than hydroelectric plants, because of the vulnerability of boilers and auxiliary equipment, and because of high chimneys which may be destroyed, damaging the part of the plant on which they fall. Protection from bomb fragments for steam plants may be obtained, in general, by putting concrete or sandbag walls about boiler rooms and isolating as much as possible the various elements of the plant.

2. Special Measures for the Protection of Industrial Plants

(*Concluded on page 105*)

150 A-W PATROL SWEEPERS
AIDING IN NATIONAL DEFENSE

HUNDREDS OF A-W PATROL SWEEPERS AIDING IN CIVIC HEALTH DEFENSE

● Shown above, working at the airfield where the Giant B-19 is being tested, is an A-W Patrol Sweeper purchased by the Douglas Aircraft Co., Inc. 150 A-W Patrols are being rushed through our plant for use in keeping the runways of America's flying fields clean and safe.

Clean, fast sweeping, maneuverability, and the tested all 'round efficiency of these patrol sweepers made them the obvious buy for defense purposes. For identical reasons they are the logical buy in your campaign for a cleaner, healthier community. Write today for full facts about the A-W Patrol Sweeper . . . and its performance in hundreds of towns and cities in this country and throughout the world. THE AUSTIN-WESTERN ROAD MACHINERY CO., Aurora, Illinois.

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During July we hope you will remember to mention THE AMERICAN CITY.

Improving Municipal Administration

Current Items from the Public Administration Clearing House

Practical Community Planning Demonstrated in Hill, N. H.

When citizens of Hill, N. H., held their annual town meeting in a new town hall in April, 1941, it symbolized the substantial completion of a planning program the community of 500 had approved on paper only a year previously.*

Early in 1940, Hill faced the choice of giving up existence or moving because of flood-control measures. So the citizens decided to build, on a site half a mile away, a new community that would have every good feature intelligent planning could bring. They sought advice of the State Planning and Development Commission, which, in turn, enlisted a dozen other state agencies to aid Hill on such matters as highways, health, schools, water supply and welfare.

"New" Hill, the American Society of Planning Officials points out, is re-establishing itself mainly with funds it will receive from the Federal Government for damages to "old" Hill because of the flood-control project. There will be extra outlay only where rebuilt facilities are superior to those of the old community.

To buy the new land site of 90 acres, the Hill Village Improvement Association, a non-profit corporation of townsmen, secured $8,000 from three banks. By selling stock at $20 a share it raised another $1,000 to pay costs of surveying and clearing of titles. Land not sold to the town for streets, parks and public buildings was divided into half-acre lots. All except nine of the lots were sold for home sites within six months, and the loan was repaid. Fifty thousand dollars borrowed from the state until the Federal funds are forthcoming financed public facilities except for the new water system, which was built with 20-year bonds; the only other financial aid is a $9,000 annual contribution by the state for three years to replace the tax revenue the town loses during the moving and reconstruction period.

There are many advantages gained from the new location. The new highway, paid for by the Federal Government, passes by instead of through the village. The shopping center is concentrated on a street parallel to the highway. Manufacturing plants will be located on the outskirts of the community. The fact that the entire village is located on one side of the highway is an aid to safety. Economy is achieved by combining in one building space for the town hall, library, selectmen's office, kitchen and dining hall, and the garage for the town truck and fire engine. Public utility mains and conduits are laid under the grass strip between the street and sidewalk, eliminating the need for expensive and inconvenient ripping-up of pavement for repairs. There will be a town playfield, and a swimming hole made from the reservoir of the old town's water supply. The town park includes a 100-foot strip of land on each side of the highway, which, with the reservoir land on its other sides, creates a "greenbelt" for the community.

"New" Hill, with additional option on 50 acres, has a site large enough to accommodate twice its population. Future developments will be protected by such devices as zoning and deed provisions specifying minimum lot size, minimum housing costs, and prevention of lot purchase for speculation.

* See The American City for May, 1940, page 75.

All New York Local Governments to Be Under Civil Service

The First Wholesale Extension of Civil Service to every jurisdiction within a state—cities, counties, and school and special districts—will be completed in New York by July 1, 1942, under provisions of a New York statute enacted this year, the Civil Service Assembly of the United States and Canada reports.

Each of the counties in the state, according to the act, will make the choice from among three types of merit system administration already existing in New York State—an administrative civil service commission, a county personnel officer, and administration by the state civil service commission. If no selection is made by June 1, 1942, the county automatically comes under the state commission's jurisdiction. Each county has the privilege of changing its form of civil service administration two years later if the system adopted proves unsatisfactory. About 18 counties now have some type of merit system.

The state personnel agency specifically retains jurisdiction over the five counties within Greater New York City, and over school districts other than city school districts.

Since each of the 61 cities in the state already has its own civil service commission functioning under general supervision of the state, the new law does not directly affect the cities. The law includes a provision, however, which permits a city to abolish its own commission at any time and come under the state commission.

The new provision for civil service was the result of a 1939 court decision that civil service was mandatory under the state constitution.

The Municipal Bond Market

Recent sales of new issues from the June numbers of *The Bond Buyer:*

Amount	Borrower and Purpose	Rate (%)	Term (Years)	Basis (%)
$150,000	Fitchburg, Mass., Municipal Relief	1	1-10 Ser.	.96
250,000	Indianapolis, Ind., City Hospital	1.25	10.85 Avg.	1.20
100,000	Lewiston, Me., Improvement and Equipment	1.25	1-10 Ser.	1.20
1,200,000	Maryland, Chesapeake Bay Ferry Revenue of 1941	1.5	7-8.75 O.-A. Prem.	1.33
325,000	Aliquippa, Pa., School	1.75	1-25 Ser.	1.66
300,000	Greenville Co., S. C., Road and Bridge	1.75	1-15 Ser.	1.67
100,000	New Philadelphia, Ohio	1.75	10.5 Avg.	1.70
350,000	Richland Co., S. C., County Library	2	11.33 Avg.	1.83
800,000	Jefferson Co., Texas, County Airport	2	7.75-10.5 A.-A.	1.92
200,000	Akron, Ohio, Delinquent Tax	2	1-10 Ser.	1.93
330,000	Newport, Ky., Flood Control	2.25	16.25 Avg.	2.16
248,000	Phoenix Housing Authority, Ariz.	2.25	5-10 O.-A.	2.249
330,000	Lee Co., Fla., Road and Bridge Refunding	4	5 Avg.	3.10
110,000	Ecorse Tp., Mich., Water Revenue	3.25	13 Avg.	3.24
100,000	Campbell Co., Tenn., Right of-way	3.5	2-11 Ser.	3.48
225,000	Mackinac Island, Mich., Dock and Water Revenue	4	5.75-14.75 A.-A.	3.99

6th Anniversary of Parking Meters

The FIRST Parking Meters in the World were installed in Oklahoma City, Okla. *on July 16, 1935*

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CARL MAGEE METER
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- Speeding up movement of traffic.
- Eliminating double parking.
- Increasing curb parking 300 per cent.
- Removing irritation between motorists and traffic officers.
- Cutting down running time of street cars and buses.
- Reducing street accidents and deaths.

PARKING METERS provide revenue to take care of . . .

- Traffic officers' salaries.
- Motorized equipment.
- Painting street directional signs.
- Street washing and repair.
- Accident prevention education.

What DUAL AUTOMATIC PARKING METERS have done for other cities, they can do for your city if you have a traffic problem.

DUAL PARKING METER CO.

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When you write for that catalog, kindly mention THE AMERICAN CITY.

Traffic Control and Facilitation

Conducted by Publications Committee, Institute of Traffic Engineers, 60 John St., New York

Charles G. Beckenbach, Chairman; Merwyn A. Kraft, Vice-Chairman; David M. Baldwin, Martin Bruening, Stephen Butterfield, Edgar F. Copell, John B. Ecker, Fred W. Fisch, Theodore W. Forbes, Milton Harris, E. Emmett Kirwin, Foster M. Kunz, Walter Matthews, Henry W. Osborne, I. S. Shattuck, Matthew Stelski, Frederick Tarbox

Transit Expert Views Pedestrian Perils

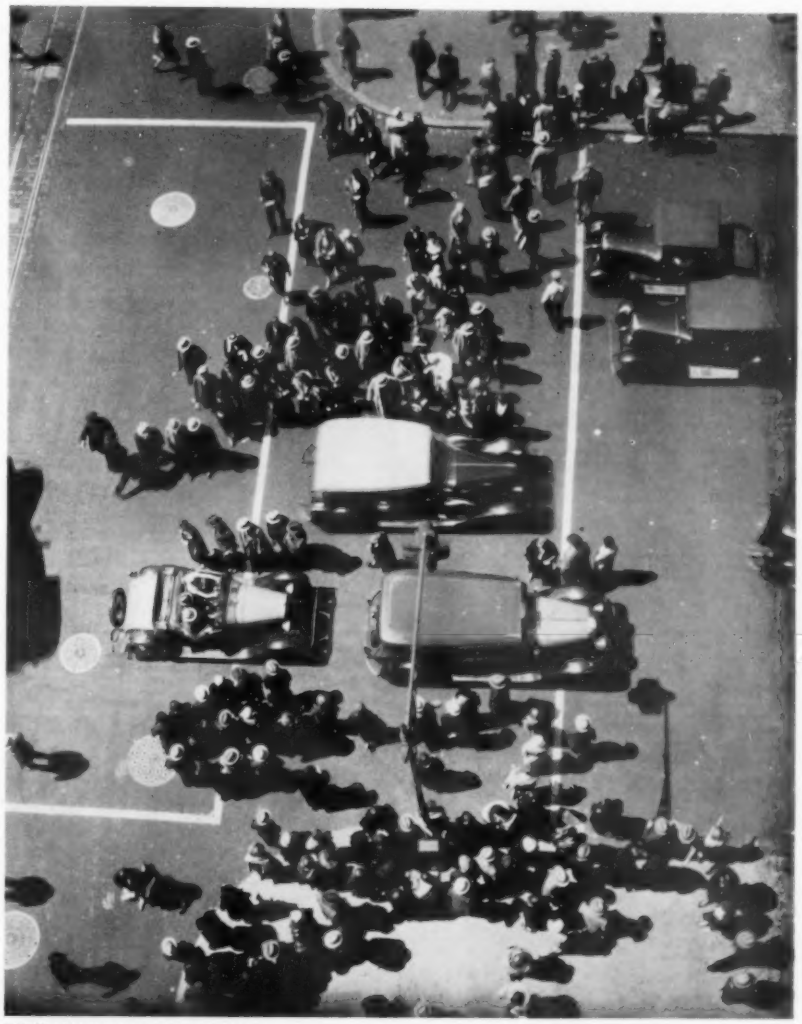
By JOHN ANDERSON MILLER
Editor, *Transit Journal*

WITH more people at work under the impetus of national defense, more vehicles are using the city streets and more pedestrians are crossing these streets. Regardless of whether the major part of one's daily travel is accomplished by automobile, bus, street car or subway, part of each trip must usually be made on foot. That's where the greatest danger lies. Pedestrians are the victims in about 70 per cent of the fatal accidents that occur in city streets. In all, some 13,000 pedestrians were killed in the United States last year—more than the number of combatant troops in one entire division of the army.

Imagine the public outcry if that number of our soldiers had been killed by accident. The death of 13,000 pedestrians, on the other hand, is accepted almost with indifference. What makes the matter worse is that the growing volume of both pedestrian and vehicular traffic seems virtually certain to result in a still greater number of pedestrian accidents unless vigorous steps are taken to remedy the situation.

Opinions differ as to where the blame lies for this heavy toll of pedestrian lives. Formerly the motorist got most of the blame, but lately it has become the fashion to blame the pedestrian. A barrage of criticism has been directed at his head on the theory that it is his own carelessness, or his cussedness, that makes him the victim of so many accidents.

Commissioner Caroll E. Mealey of New York State's Bureau of Motor Vehicles has said that a statistical study of pedestrian accidents in that state "developed the somewhat surprising fact that pedestrian acts contribute to nearly 60 per cent of the fatal and nearly 75 per cent of the non-fatal pedestrian accidents." While these statistics are interesting, it may be significant that they are based largely on the reports made to the police by the motorists involved in these accidents. The dead pedestrians make no reports.



PHOTOGRAPH BY GEORGE A. DOUGLAS

Lives can be saved by promoting pedestrian safety; not by calling names, but through traffic regulations which recognize the needs of the pedestrian and provide for meeting them

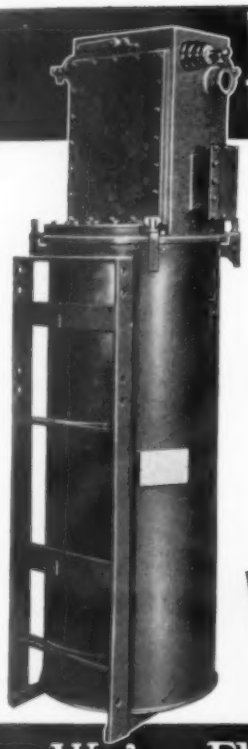
Obey Lights?

A favorite suggestion for reducing the number of pedestrian accidents is to compel the pedestrian to observe traffic regulations. General W. E. Guthner, head of Denver's Department of Safety, once described the pedestrian as a "spoiled and pampered child." He should be made, the General said, to obey traffic rules "by punishment if necessary."

This is in accord with the old American custom of passing a law to remedy the situation whenever a problem

* See review of "Fares, Please!" on page 109 of this issue.

WAGNER Type Y-H Constant-Current Regulator for Street Lighting Saves Money Three Ways...



1 EFFICIENT OPERATION—This new regulator operates at high efficiency from fractional to full load....has unity or leading power-factor ....the current drawn from the line is in direct proportion to the load....regulator has no moving coils....makes instant adjustment to changes in load.

2 EASY INSTALLATION—The regulator and all control equipment are mounted into a rugged, compact unit, suitable for pole, platform, or vault installations without reassembly of any parts. Also, the assembled unit is small enough so that it can be lowered into a vault through standard size manholes.

Investigate the many advantages of the Wagner Y-H Constant-Current Regulator. Mail coupon for complete information.

T 41-4

3 MINIMUM MAINTENANCE—The regulator is protected against faults in the loop circuit. Should a break occur in the loop circuit, the regulator quickly disconnects itself from the supply-line. A short-circuit in the loop does not damage it. The switching equipment is practically non-sparking since the supply-line contacts never open or close under load. Long life and minimum maintenance are the result.

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HAND or WET PROCESS

Make concrete pipe on the job with Quinn Pipe Forms. They can be handled by less experienced labor and produce uniform concrete pipe of highest quality. Quinn Pipe Forms make pipe conforming to A.S.T.M. requirements as to wall thickness and other standards.

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Our Heavy-Duty type with Adjustable Locks is shown above. Quinn Heavy-Duty Forms are also available with a new wedge-type lock.

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Get complete information on prices and Special Construction Features of Quinn Pipe Forms. Give us size of job for estimate on your pipe form needs. Also manufacturers of Quinn Concrete Pipe Machines for making pipe by machine process.

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arises. That it would accomplish much in this instance seems extremely doubtful. A number of American cities have tried to compel pedestrians to obey traffic regulations, but have found enforcement to be virtually impossible without doubling or tripling the size of the police force.

One reason that the pedestrian is not more observant of traffic regulations is that he has found that he is not always safe even when he does obey the rules. Take the case of the pedestrian who crosses properly at a street intersection and is willing to wait until the lights change in his favor. How long he has to wait is a matter of chance, but it may be as long as a minute and a half. When the lights change, he steps briskly off the sidewalk, only to be greeted by the blare of a horn as a vehicle to his left starts to turn the corner. He steps quickly back to the curb and waits patiently while a seemingly endless stream of vehicles make right turns. At last the stream ends and he proceeds to cross. Then, suddenly, another horn blares at him. This time it is a delivery truck making a left turn which bears down on him. He makes a flying leap forward, escaping the truck's mudguard by inches.

By now he has reached the center of the intersecting street and feels that the worst of his troubles are over. Only 30 feet more and he will be on the sidewalk again. But it is not as easy as all that. Stopped squarely on the crosswalk ahead of him is a taxicab which failed to halt promptly when the lights turned against it. Shall he detour in front of it, or in back? Somehow the rear seems safer, so he starts to pick his way between its tail-light and the front bumper of the auto next in his column. As he does so the signal lights change and the whole mass of vehicles begins to move, leaving him marooned between those in the center lane and those in another lane nearer the curb. He stands there until a momentary break in the flow of vehicles gives him a chance to dart across to the safety of the sidewalk.

Such is a characteristic experience of a man obeying the traffic rules in every respect. His obedience failed to assure him a safe crossing, and it caused him more delay than if he had blandly ignored the traffic lights. This experience, it may be argued, represents an exceptionally unfortunate combination of difficulties encountered by the pedestrian. Perhaps it does, but there are enough of these difficulties present whenever the pedestrian attempts to cross the street to convince him that there's not much use in obeying traffic regulations. To compel him to obey them might help the motorists, he thinks, but it would not help him much.

Grade Separation?

Another popular solution of the problem is grade separation. This is a favorite with the artists who paint pictures of the city of the future. Almost all of them succumb to the lure of pedestrian bridges spanning the swiftly moving streams of traffic. These bridges may look well in pictures, but they do not amount to very much in practice. New York tried the idea as far back as 1867, when an iron bridge was built across Broadway at Fulton Street to permit persons on foot to cross the street free from the danger of being trampled under the hooves of dashing steeds. Old pictures indicate that it was a gracefully designed and atractive structure, but it did not prove popular, and it was torn down the year after it was built.

The same general idea has been tried more recently in the form of tunnels permitting the pedestrians to pass under vehicular traffic at busy locations. These tunnels are all right at some spots where the vehicular traffic is extraordinarily heavy, but they have failed to win much public favor under ordinary circumstances. Pedestrians, it appears, prefer the dangers of the surface to the safety of a detour above or below ground. In any event, the cost of building enough underpasses and overpasses to accomplish any far-reaching result would be prohibitive.

Foolproof Crossings?

Industrial management, a few years ago, was faced with a problem not unlike that which traffic authorities face in respect to the pedestrian. Industrial workers were getting injured and killed with considerable frequency. The rules which management framed to protect the workers were often violated. The safety devices which management provided were frequently ignored. Then a new technique was developed. Machines were designed and placed so as to make the safe way the easy and convenient way for the worker. He didn't have to make a special effort to work the safe way; he just slipped into the safe way naturally—and the number of accidents was greatly reduced.

This principle could be applied effectively to promote pedestrian safety. Take for example, the timing of traffic lights. Long intervals between the changes of lights cause pedestrians to become impatient and start to cross before the green appears. Long intervals also encourage motorists to cheat a little on the lights they think they can get away with it. Short intervals, on the other hand, encourage both motorists and pedestrians to wait until the lights are in their favor, as they know they won't have to wait very long. The distribution of time between the two intersecting streets is important, too. If it is in accordance with the actual volume of movement, the pedestrian does not find himself standing on the curb waiting for a green light while no traffic is moving on the street he wants to cross.

Another possible element of timing is to provide a reasonable interval between the disappearance of the green light in one direction and its appearance on the intersecting street. When there is no such interval, the pedestrian who starts on the green light may find himself caught halfway across the street. The New York Supreme Court has ruled that "one who starts to cross a traffic-controlled highway with the lights in his favor has the right-of-way over traffic proceeding on that highway until he reaches the other side, even though in the meantime the traffic lights change." This decision, however, has not made any noticeable difference in the habit of vehicular traffic starting the instant the light turns green. The use of an amber light of short duration between the red and green permits the pedestrian who is halfway across the street to finish his crossing in safety. A pedestrian who obeys the lights is then assured of full protection, and usually is glad to do so.

More Traffic Lights?

Then, too, there is the question of where to place the lights. With a mistaken idea of economy, many cities try to make one traffic light do the work of half a dozen. At some of the busiest intersections in New York and other cities there are no traffic lights at all. Both pedestrians and motorists are supposed to look up or down the street to see what the signal shows at a nearby intersection. Some do; some don't. Often traffic lights are mounted high up on street-lighting poles where they can easily be missed unless one knows just where to look. The idea of placing them so high is to make a single light visible to persons and vehicles approaching the intersection from any one of four directions. Experience, however, has shown that it is far better to have a light on a short pole at each corner of the intersection so that a signal faces the pedestrian or motorist from whatever direction he may be approaching.

What all this boils down to is that

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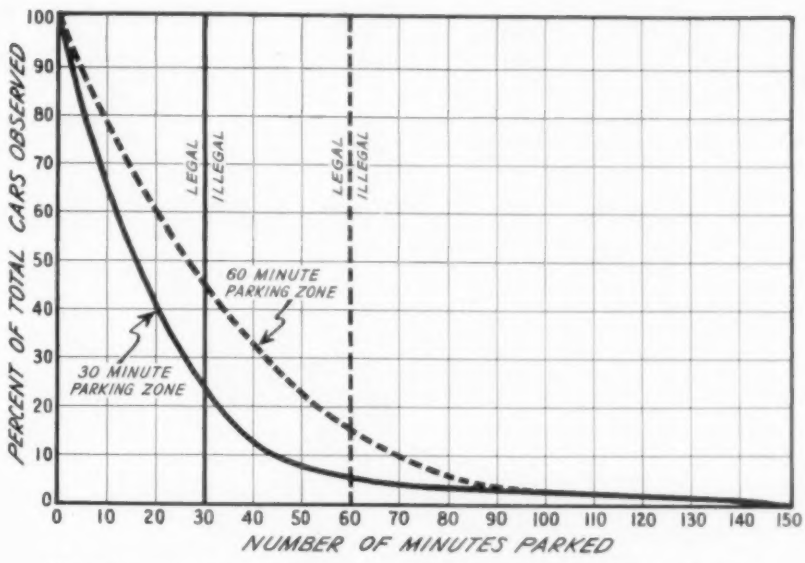
Lithographed on stone by Edward A. Wilson

the proper placing and timing of traffic lights make the safe way an easy way for everyone—and the result is fewer accidents. Kansas City is a case example. Careful thought has been given there to the needs of the pedestrian, and how traffic regulation can be arranged so that it will be simple and easy for the pedestrian to obey the rules. Since this has been done, G. M. Burns, Managing Director of the local Safety Council, has estimated that 90 to 95 per cent of all pedestrians voluntarily observe the traffic rules in the downtown district and 60 to 70 per cent observe them in the outlying districts. Pedestrian fatalities in 1939 were 35 fewer than the year before.

This idea of giving more consideration to the needs of the pedestrian is emphasized by Burton W. Marsh, Director of the Safety and Traffic Engineering Department of the American Automobile Association. "Wherever today's traffic situation is analyzed," he says, "the pedestrian stands out sharply as in urgent need of major consideration. In city after city and state after state, major attention has been devoted to vehicular phases of the traffic problem. These phases have monopolized the spotlight; on them has been spent the bulk of time, thought and funds devoted to better and more orderly traffic conditions. The convenience, safety and general well-being of the man-on-foot, if not forgotten, have all too often been relegated to secondary importance."

Here is the obvious place to begin if this country is going to make a serious effort to reduce the appalling number of automobile accidents which occur every year. Probably more lives can be saved by promoting pedestrian safety than in any other single way. But experience shows that it can't be done by calling the pedestrian unpleasant names. The only way it can be done is through traffic regulations that recognize the needs of the pedestrian.



Showing Average Parking Times of Cars in 30-Minute and 60-Minute Zones in Minneapolis

Parking Meters in Minneapolis

By J. C. VINCENT
Electrical and Mechanical Engineer, Engineer's Department, Minneapolis, Minn.

THE breaking-in period with our 1,050 parking meters, installed in April, 1940, is over, and everyone is pretty well satisfied. In fact, we expect to install an additional 400 meters on principal parking streets in the central business district, where at present 70 block sides are equipped.

The ordinance permits 1-hour parking at 75 per cent of the meters, and 30-minute parking on two major streets. The fee is 5 cents.

Counts have been made of the actual parking time used by 571 cars in the 30-minute zones, and by 1,448 cars in the 60-minute zones, in the period of a week. Of the 571 cars, 460 parked legally an average of 14 minutes; the 111 illegal parkers averaging 55 minutes. Of the 1,448 cars, 1,268 parked legally an average of 29 minutes, while 180 cars averaged 95 minutes. The chart shows the large proportion of parkers who observe the ordinance, and the few cars which, without stricter enforcement, overstay the legal time.

Enforcement in Minneapolis is by three squad cars with civilian driver and a police officer in each, circulating through the metered streets. The adjacent streets are parked heavily, requiring additional enforcement there.

The City Engineer's Department has had charge of the meters since April 1, 1941. Operation difficulties are few. Since May 1 we have regularly checked all meters for maintenance, including greasing and oiling. The accompanying table shows the type of maintenance and difficulties encountered. A maintenance man at $145 per month handles at present 1,000 meters.

The coins are collected by employees of the City Treasurer's office. Collections per meter average $11.50 per month, or 45 cents per day. Total monthly collection from 1,050 meters:

April 27 to May 6, 1940	$4,481.40
May 7 to May 31, 1940	10,672.44
June	12,223.17
July	13,364.29
August	12,781.22
September	12,341.57
October	12,981.60
November	9,515.30
December	11,905.07
January, 1941	11,091.10
February	10,473.94
March	11,644.62
April	13,147.85
May	12,245.70
June	12,324.55

ANALYSIS OF PARKING METER CALLS DURING THE MONTHS OF—

	June, 1940	Nov., 1940	Feb., 1941	Aprt., 1941
External Troubles				
Damaged and bent posts, broken glass, damaged cases	4	7	14	20
Posts loose—heads loose	1	—	—	3
Broken case and flange	1	—	—	1
Locks	—	—	—	2
Internal Troubles				
*Coin slot plugged (gum, matches, slugs, paper, etc.)	91	26	52	33
Mechanism adjustments	49	41	64**	37
Coin tube adjustment	16	24	3	1
***"Alibi calls"—No service necessary (overtime parkers' complaints)	56	29	50	30
Meter run down	5	8	7	4

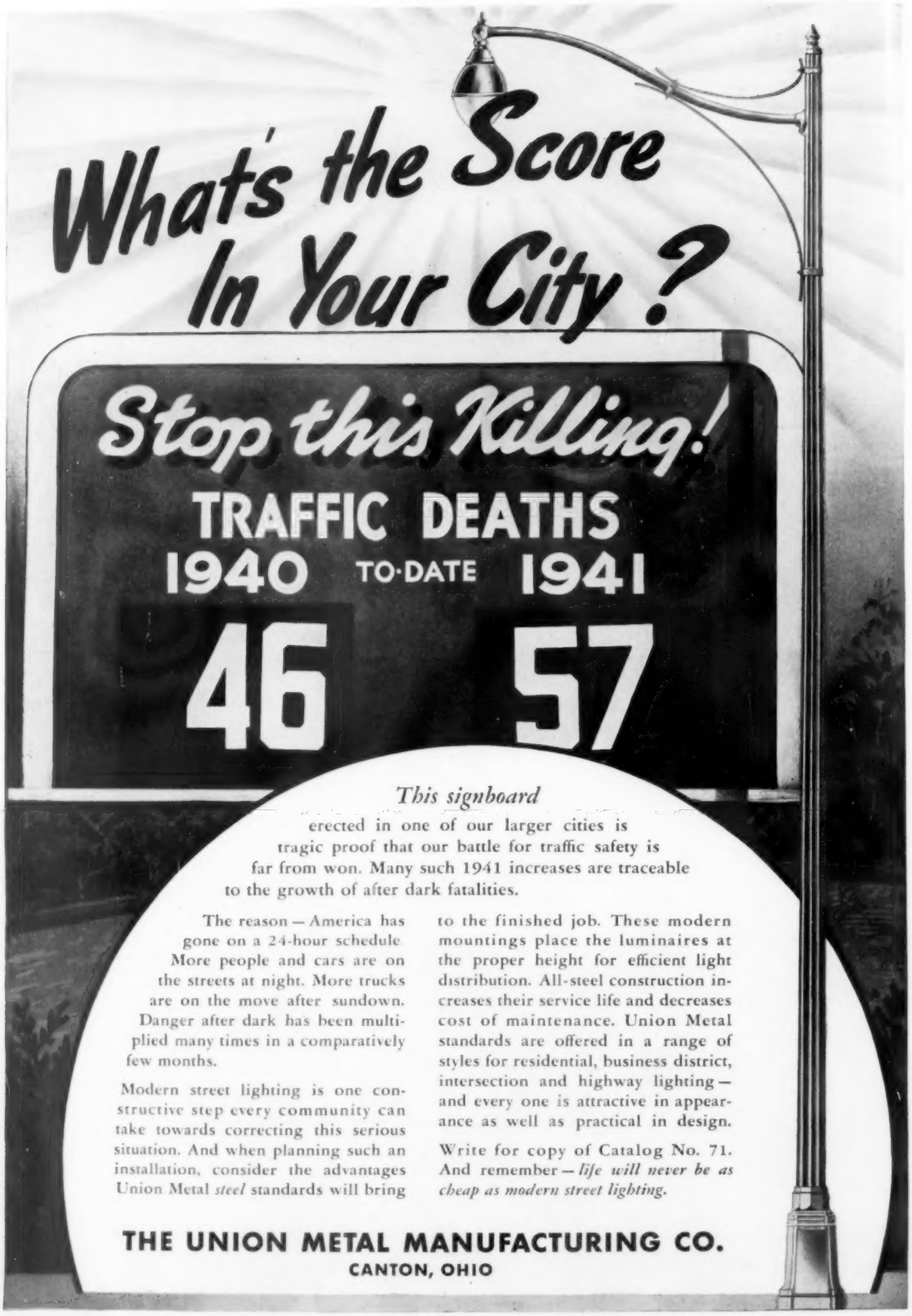
* Misuse of meters has declined to "usual number" of calls.

** Engineer's office called for adjustment of all meters before city took over their operation.

*** "Alibi calls" mostly from motorists who have been tagged for illegal parking.

June, 1940—Meters placed in operation about 3rd week in April, 1940—average number in operation, 1,050.

Nov., 1940—Blizzard of Monday, Nov. 11, 1940, kept cars out of loop until normal conditions returned on Thursday. Tuesday, Wednesday, and Thursday spent removing snow from *most meters*.



This signboard
erected in one of our larger cities is tragic proof that our battle for traffic safety is far from won. Many such 1941 increases are traceable to the growth of after dark fatalities.

The reason — America has gone on a 24-hour schedule. More people and cars are on the streets at night. More trucks are on the move after sundown. Danger after dark has been multiplied many times in a comparatively few months.

Modern street lighting is one constructive step every community can take towards correcting this serious situation. And when planning such an installation, consider the advantages Union Metal *steel* standards will bring to the finished job. These modern mountings place the luminaires at the proper height for efficient light distribution. All-steel construction increases their service life and decreases cost of maintenance. Union Metal standards are offered in a range of styles for residential, business district, intersection and highway lighting — and every one is attractive in appearance as well as practical in design.

Write for copy of Catalog No. 71. And remember — *life will never be as cheap as modern street lighting.*

THE UNION METAL MANUFACTURING CO.
CANTON, OHIO

Outdoor Lighting
Streets—Highways—Floodlighting

Longest Lighted Highway in the South

ALABAMA not only has a highway lighting program comparable to the fine work done by the New Jersey Highway Department, but is selling the meaning and values of the improvement to the people of the state.

Back of the program, which consists of five specific installations, two completed, is not only the Alabama Highway Department, headed by Chris J. Sherlock, but the energetic results-getting Junior Chamber of Commerce as well, invaluably aided by the Birmingham Electric Co. and the Westinghouse Electric & Manufacturing Co.

The initial installation, and the first lighted highway in the state, or south of Ohio and east of the Mississippi River, was the Attalla-Gadsden stretch of U. S. 11 connecting Birmingham with Memphis. The results are unanswerable:

	Ten Months	
	Before Lighting	After Lighting
Accidents	71	0
Killed	7	0
Injured	43	0
Vehicles damaged	153	0

The second installation is the six-lane super-highway between Bessemer and Birmingham, dedicated on December 30, 1940. President Max Pickens of the Bessemer Junior Chamber of Commerce made the presentation, Mayor Jap Bryant spoke on "Bessemer's Appreciation of the New Lighted Super-Highway," and President Cooper Green of the Birmingham City Commission gave Birmingham's appreciation.

This installation consists of 227 Westinghouse pendant luminaires with 10,000-lumen lamps equipped with Holophane refractors, spaced 125 feet apart in staggered arrangement and mounted 25 feet to light source. Each luminaire is suspended from a long upsweep trussed mast-arm furnished by the Utilities Service Co., Allentown, Pa. This type of mast-arm not only meets the needs of highway lighting service but is particularly effective in towns and cities where brackets must be attached to wood poles carrying several mast-arms and possibly transformers. The upsweep design not only clears the obstructions, but on short poles provides additional height as well.

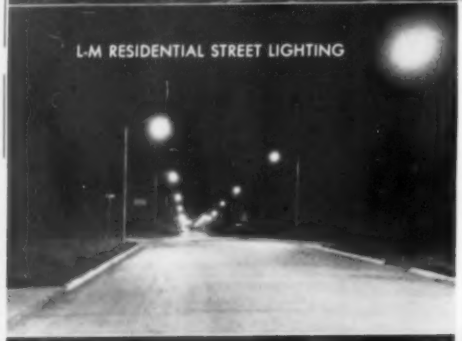
The Bessemer Super-Highway is said by the *Birmingham News* to carry the heaviest traffic out of Birmingham, and "although the highway has been made safer by a middle parkway, it is still a dangerous stretch of road. Illumination of this stretch of much-used highway will serve to demonstrate the advantages of night-lighted interurban roads. As a result of this experience, it is likely that more of our crowded highways will be lighted."

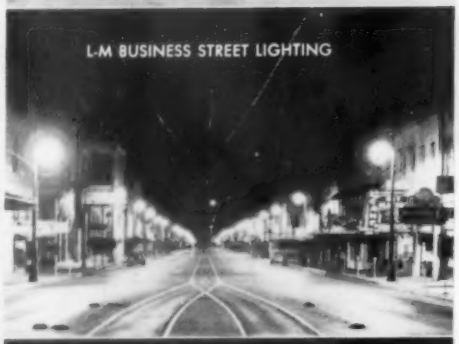
Simpler Rates for Street Lighting

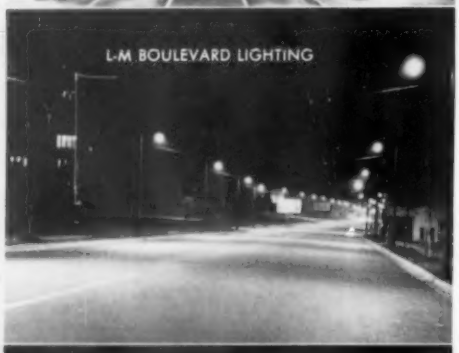
It Has Been Pointed Out that some of the complicated street-lighting rates in force in many cities were necessary because of lack of standardization of equipment, and certain other difficulties. But now, in view of the modern types of equipment and the uniform technique of their use, may it not be feasible to simplify these rate structures?

PHOTOGRAPHS SUPPLIED BY UTILITIES SERVICE CO., ALLENTOWN, PA.

Daytime Appearance of Bessemer-Birmingham Super-Highway, Alabama







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PROTECTIVE LIGHTING

The complete line of L-M Protective Lighting Equipment is ready for service at your municipal plants, reservoirs, factories and other vital properties. Write for Bulletin No. LMB-4121, and get further information. Line Material Company, 800 North Eighth Street, Milwaukee, Wisconsin.

LINE MATERIAL COMPANY

For Safer Highways

THE STREET AND HIGHWAY LIGHTING COMMITTEE of the Illuminating Engineering Society, meeting in New York City recently, passed the following resolution:

"*Whereas* it is becoming increasingly apparent that lack of highway lighting is responsible for the majority of night traffic accidents; and

"*Whereas* it has been amply demonstrated that the cost of operating reasonably effective highway lighting is materially less than cost of accidents which it would prevent; therefore be it

"*Resolved* that the Street and Highway Lighting Committee of the Illuminating Engineering Society urge that responsible authorities shall make special effort to bring about the adequate lighting of highways upon which the night accident record is excessive."

Lighting to Fit the Traffic

OIL LIGHTS, GAS LIGHTS, ARC LIGHTS, street markers of days gone by—what did they matter to the unsteady pedestrian or the horse-drawn wagon, carriage, or buggy?

Even the famous White Light period wasn't concerned with visibility, but with light lines for guidance and white lights for show. The footpad was the chief menace, and actually there were not so many of him.

Only ten years ago it was felt that such street lighting as there was could be "curtailed," as much as to say omitted. That snapped the camel's backbone and, notably in Detroit, traffic safety lighting was conceived. What is traffic safety lighting? Merely that quality of street lighting which renders objects sufficiently visible to avoid collisions.

The results in fewer accidents, greater safety and enjoyment, have been written wherever modern street lighting has been installed.

Show Night and Day Accident Statistics

THE TEXAS HIGHWAY DEPARTMENT is congratulated on its excellent statistical report on 1940 Texas Highway Facts. The striking cover of this report is reproduced in reverse on this page to accentuate the menace of darkness.

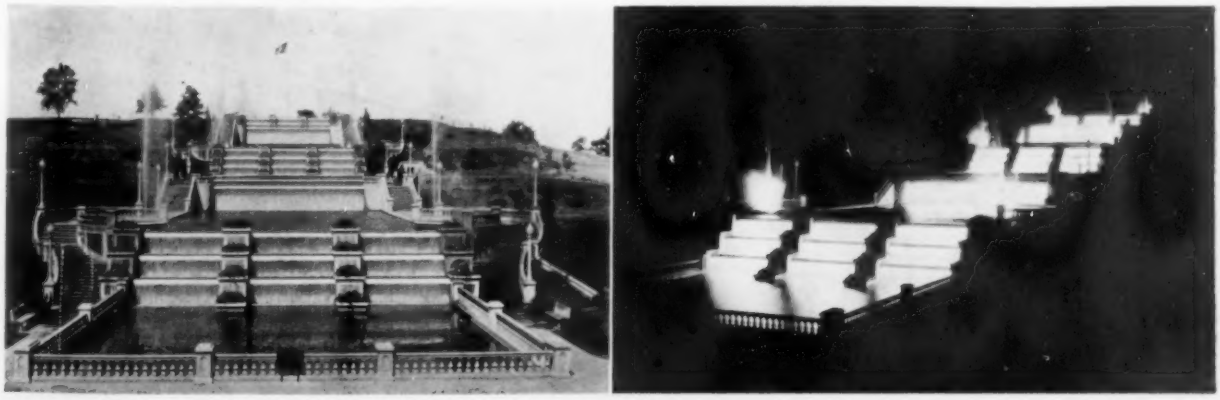
In most states, night-time conditions and accidents constitute the major problem. This is probably the case also in Texas, although this report does not compare the day accidents with the night accidents. State highway and motor-vehicle commissions should find it very well worth while to segregate the day and night statistics and publish them.

Fifth Year of Jackson Illuminated Cascades

MORE THAN 2,000,000 PERSONS from every state and territory of the United States and Canada viewed the Jackson, Mich., Illuminated Cascades during 1940, and on May 30 they were turned on for the 1941 season.

The Cascades are the scenic background of the William and Matilda Sparks Foundation, Inc., consisting of 465 acres of richly developed parkways, lagoons, gardens, golf course and drives just outside the city limits near routes U. S. 127 and Mich. 60. MR. Sparks is a former mayor of Jackson.

The Cascades are 550 feet long, 60 feet wide, 84 feet high, and are divided into 11 falls. There are three pools 30 x 90 feet, each containing two fountains. Pumps with a capacity of 3,000 gpm supply the water. The 1,230 lamps, totaling 240 kw, are red, blue, and green, and by blending these a multitude of colors is obtained—and a memorable evening.



Day and Night Views of the Jackson, Mich., Cascades, 550 x 60 Feet x 84 Feet High Lighted by 1,230 Red, Green and Blue Lamps

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FOR YOUR CIVIL DEFENSE PROGRAM

LIGHTING FOR SAFETY

With Civil Defense Authorities stressing the need for protective lighting of reservoirs, armories, docks and other areas vital to the safety of the community, why not *reinforce* your planning with the aid of a GRAYBAR Lighting Specialist? These men know how to handle any type of lighting problem – from an airport to an office. GRAYBAR'S wide range of lighting units and supplies reduces delivery delays to the minimum possible under present conditions.

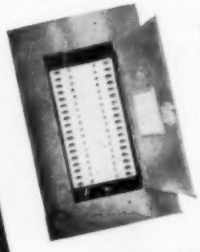
ALARM SYSTEMS FOR SAFETY

In times like the present, municipal fire alarm systems must be sure, swift and well protected against accidental or willful interruption. From GRAYBAR, you get such performance-tested equipment as HORNI boxes and registers, NORTH "All Relay" Code Transmitters, TELETYPE Systems, PHILCO Batteries and all the necessary accessories. Experienced specialists are on call to help plan modernization of fire alarm systems. Burglar alarms, interior fire alarm systems, warning bells, sirens, horns and the like are also available via GRAYBAR.

INTER-COMMUNICATION FOR SAFETY

Your ability to locate and talk to associates and subordinates promptly and without fail can save time every day . . . and may be essential to safety in emergencies. To alleviate the increasing work-load which many municipalities face, consider the advantage of a modern, carefully planned system of interior communication in city offices, police and fire stations and headquarters of other municipal services. GRAYBAR can supply large or small systems for amplified or confidential communication. A specialist familiar with the overall problem is at your service.

WIRING SUPPLIES FOR SAFETY



It makes a big difference to the efficiency of *all* municipal services to be "electrically prepared" with indoor and outdoor signalling lines, lighting and power lines that are fully adequate to take increased loads and well protected from damage or interruption. In many instances, rewiring may be advisable, or overhead lines shifted underground. Switch-gear controls, panel boxes, etc., also call for a check-up to assure the necessary operating flexibility.

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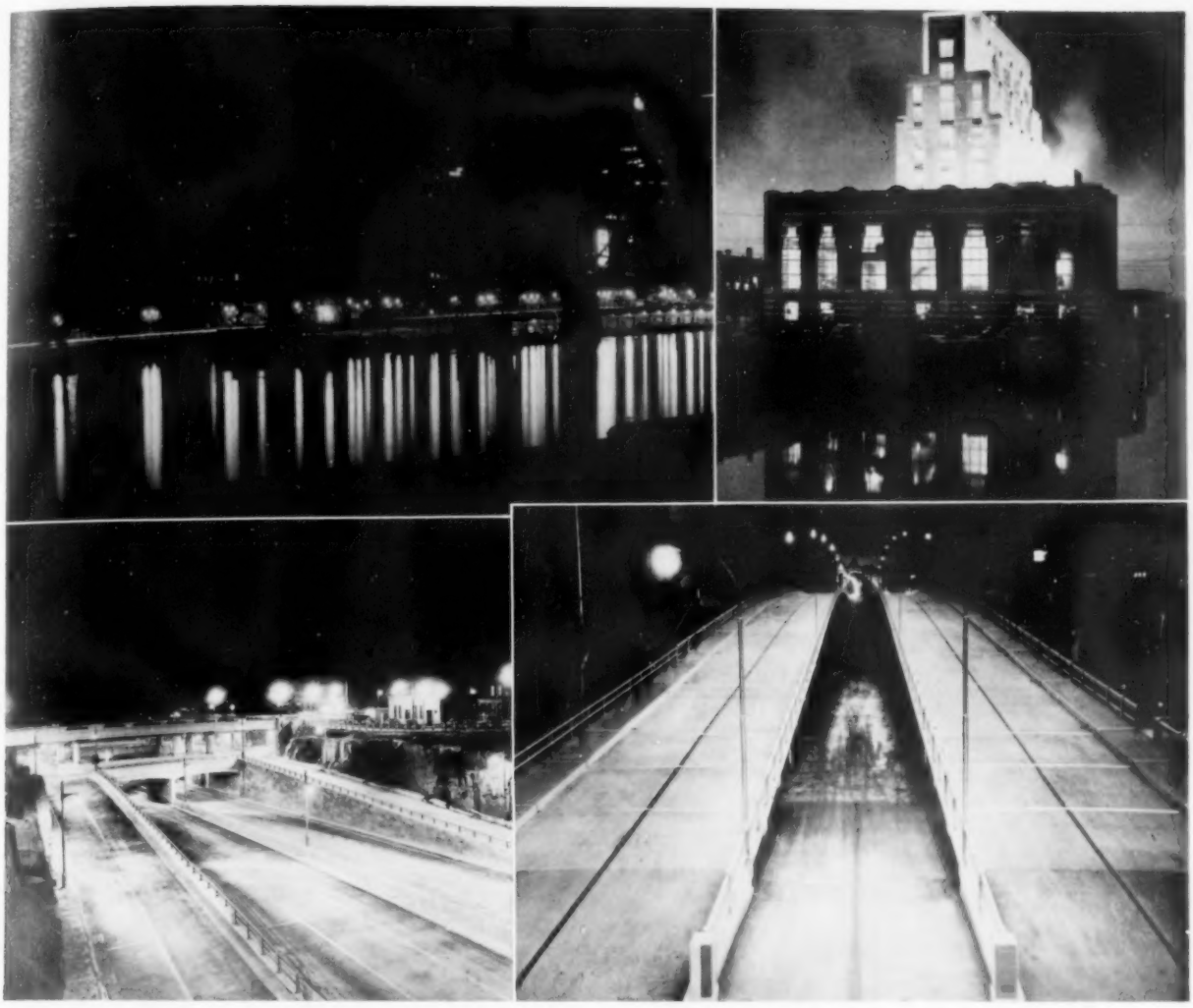
Your local GRAYBAR representative is fully informed on the current situation with respect to the delivery of electrical equipment and supplies. Where your needs are for defense purposes, he can serve you expeditiously and in every case, can help you avoid unnecessary delays and confusion.



Upper, Elevated Highway in Pittsburgh; Municipal Electric Plant in Lansing. Lower, Approaching Lincoln Tunnel in New Jersey; Overpass in Shreveport. See text below

Striking Bits of Modern Lighting

AT TOP left is Pittsburgh's new $3,000,000 elevated traffic bypass in the Golden Triangle, the best-lighted thoroughfare in that city and one of the most brilliantly illuminated stretches of highway in the country. At night the new semi-silhouette lighting provides safety comparable with that of daylight, says the Duquesne Light Co.

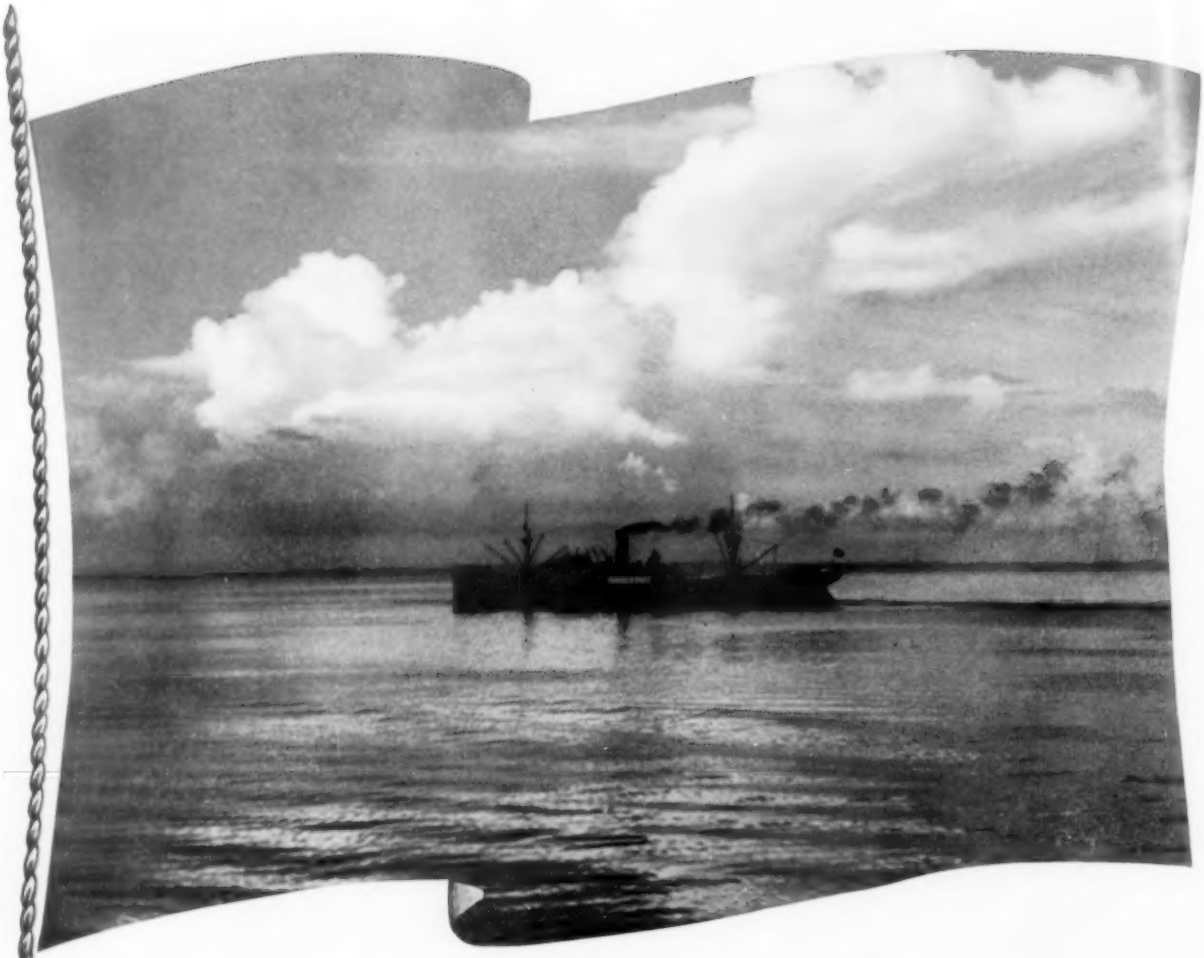
Ninety 300-watt or 6,000-lumen Westinghouse lighting units flood the roadway with more than a half-million lumens, producing an average intensity of thirty times bright moonlight. The lighting units are spaced 100 feet apart with a 23-foot mounting height, and operate on a 7.5-ampere series system.

Alongside is the tower of the new Ottawa Street municipal power station at Lansing, Mich., illuminated to simulate a flame. On the first setback of the building, floodlights with red lenses are used; red lenses diluted with amber are used on the second setback, and on the third setback amber is used. Windows are illuminated from the inside with mercury vapor lights, giving a contrasting color against the red and amber.

At lower left is a three-level intersection on the New Jersey approach to the Lincoln Tunnel. On the lower highway traffic flows to and from the tunnel. The second tier is reached over ramps at the left and right. These carry traffic to the local streets of Union City, N. J., and to the Hudson County Boulevard, which is the third-tier roadway and the main traffic artery. The high visibility is produced by a unit designed to direct the generated light to the pavement surfaces, and to prevent waste of light into the night sky. A Holophane refractor bowl on the luminaire distributes the light up and down the traffic lanes.

At lower right note the high and even order of pavement brightness, resulting in long-range visibility at night, produced by 22 General Electric sodium lights on the Market Street overpass in Shreveport, La. This picture shows the sodium-lighted overpass. The luminaires hang from 6-foot brackets on Union Metal standards 30 feet above the 25-foot pavements.

Street-lighting costs for a thousand municipalities are being compiled for
THE MUNICIPAL INDEX.



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Prepared by
FRANK B. WILLIAMS
Author of "The Law of City Planning and Zoning"

Zoning and Planning Notes

With the cooperation of
EDWARD M. BASSETT
Author of "Zoning" and of "The Master Plan"

Emergency Ordinance

MARYLAND.—*In re Roberts,* Circuit Court for Baltimore County, September 23, 1940, not reported.—On May 17, 1939, the Legislature granted authority to the Baltimore County Commissioners to designate residence districts only, and to regulate and restrict in a uniform manner the uses of property within such districts. Roberts had bought land within this area subsequently laid out as residential. Under this authority he now seeks to erect a dairy produce store on his property, claiming that the ordinance is unconstitutional as to him.

The Court upholds the ordinance, saying in part:

"With the * * * contention that the Board exceeded the power vested in it by the Legislature and therefore acted illegally, the Court cannot agree. It would be unreasonable to say that the Board of County Commissioners must complete the survey of the whole area authorized to be zoned by the Legislature before acting on a particular spot. It must be borne in mind that the Legislature passed this act as an emergency measure to take effect immediately. To hold that there must be lengthy proceedings, hearings and surveys before the Board could legally restrict the use of land in any particular district, would be to defeat the will of the Legislature * * *.

"The fact that the applicant had contracted to purchase the land before the passage of the act * * * gives him no vested rights as against the County."

EDITOR'S NOTE.—The validity of this case as a precedent may be questioned. While there are cases holding that some of the requisites of valid zoning may be dispensed with in emergency zoning, the better law would seem to be that in all cases the requirements of comprehensive zoning must be met. See Bassett, "Zoning," p. 87; contra *Darlington* v. *Board of Councilmen of City of Frankfort,* 140 So. 2d, 392, summarized in our Notes for October, 1940.

Spot Zoning

WISCONSIN.—*Eggebeen* v. *Sonnenberg,* Circuit Court, County of Sheboygan (unreported) *.—This was an action to determine the validity of an amendment of the zoning ordinance. The ordinance had placed a large area, surrounding a beautiful park, in an "A" residential district. Sonnenberg, the owner of about two-thirds of a city block in this area, wished to build an apartment on his land, and obtained an amendment of the zoning ordinance making it a "C" residential district, in which apartments would be permitted. This land is 1½ blocks from the nearest class "B" zone and 10 blocks from the nearest class "C" zone, and would be entirely surrounded by the remainder of the class "C" zone.

The Court decided against the validity of the amendment, finding that it would be a detriment to the other property owners in the zone, who had built in reliance upon the zoning ordinance. In this connection Mr. Bettman says:

"In its argument on this point the Court stated that the amendment would deprive many of the other lot owners in the district of a distinct property right. The concept that zoning creates property rights is obviously a loose use of the expression 'property right' which would, if carried to an immoderate extent, unduly confuse the process of sound zoning amendment."

"A realtor, who was also a member of the planning commission, explained the Planning Commission's approval of the amendment by saying that the Commission 'was guided by the plans and pictures of the proposed apartment building and its setback, that it would bring more tax revenue to the city, give employment in its building, and would be more sightly than a vacant, wind-swept, weed-grown lot.' The Court gave a vigorous thrashing to this argument and was quite conscious of the fallacy of deciding the appropriateness of zoning any property by the nature of the particular structure which is proposed to be built thereon.

"Indeed, the Court pointed out that there had been nothing like a comprehensive plan brought in to justify the placing of the Sonnenberg tract on the map as a residence 'C' district; thus showing a consciousness that every part of the zoning of the territory of the city should find its justification in the entire zone plan, whether the original zone plan or the amended zone plan—a concept which when followed is the best protection against spot zoning. The Court frequently called the amendment a piece of 'spot' zoning. In its own language 'it (the amendment) enlarges no Class "C" district, it changes no boundary lines of any district, nor does it make any district more compact.'"

* From a digest of the case by Alfred Bettman in the *News Letter* of the American Society of Planning Officials.

Measures of Defense Against Aerial Attack

(*Continued from page 87*)

In general, many of the points covered under the protection of buildings and utilities are applicable to industrial plants. Steam boilers, machinery, essential water and gas mains, switchboards, and electrical cables should receive special attention. Besides causing disruption of operations, the destruction of supply pipes by bombs might involve flooding or explosion.

The storage of highly inflammable material, such as gasoline, oil, or chemicals in tanks, should receive special consideration on account of the serious fire risk. This may involve the construction of dikes around tanks, placement of tanks underground, or removal of tanks to a less dangerous location.

Communications must be maintained for emergency service. Duplication of lines and location of telephones in shelter and first-aid stations are necessary for adequate control.

In most cases, sandbags will afford the simplest and most effective means of protection of essential machinery against fragments, but wooden boxes filled with sand are an excellent substitute. Where practicable, duplicates of vital machinery, tools, dies, and special fittings should be obtained, if not already available, and stored as additional insurance against interruption. These duplicates should be dispersed, and should be away from the main buildings.

As previously mentioned, incendiary bombs may be expected to pierce light roofs and burn on the floor of the top story. Although most modern industrial buildings are of steel or concrete construction and consequently less vulnerable to fire, the contents of many such buildings are highly inflammable. It is most important, therefore, to take all possible steps to reduce the risk of fire by having adequate portable fire-fighting equipment in addition to permanent installations which may be damaged. Reserve supplies of water in static tanks or other reservoirs should be provided. Stocks of inflammable material should be reduced as far as possible.

Study should be made of the problem of carrying on work if supplies of water, electricity, and gas from public or private sources should be interrupted by damage to producing stations or service mains. Auxiliary power plants should be provided and maintained in working condition. Duplication of power and communication lines, switchboards, and other utilities is desirable.

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Municipal Law Notes and Decisions

Prepared by National Institute of Municipal Law Officers, Washington, D. C.
Charles S. Rhyne, Executive Director, and John A. McIntire, Consultant

National Defense—Federal-City Relations—Duty of Army Convoy to Obey Traffic Signals

In the recent case of *Neu* v. *McCarthy*, 33 N. E. (2d) 570 (Mass. Apr. 18, 1941), it was decided that a driver of an army truck traveling in a convoy who obeyed the orders of his superior officer "to proceed and keep up with the convoy regardless" was not guilty of contributory negligence in driving through a red traffic light. The light was located at an intersection of two highways in Dedham, Mass., and had been placed there under regulations by the State Department of Public Works under proper authority. While this case merely decides the issue of contributory negligence in the matter of running through the light in obedience to orders but in violation of state law, the opinion takes occasion to survey and expound the law governing the relation of state, local, and Federal laws regarding military activity within the political jurisdiction of states and local subdivisions. The opinion serves as a timely commentary on a subject that is of increasing practical importance as a result of the National Defense activities.

At one place Justice *Qua* observes: "A person who enters military service is not thereby relieved from his obligation to observe the law of the jurisdiction in which he finds himself. Speaking generally, he is liable for his torts as are other persons. *Little* v. *Barreme*, 2 Cranch 170, 171, 2 L. ed. 243; *Mitchell* v. *Harmony*, 13 How. 115, 14 L. ed. 75; *Bates* v. *Clark*, 95 U. S. 204, 24 L. ed. 471; *Franks* v. *Smith*, 142 Ky. 232, 134 S. W. 484, L. R. A. 1915A, 1141, Ann. Cas. 1912D, 319; *Bishop* v. *Vandercook*, 228 Mich. 299, 200 N. W. 278; *State* v. *Sparks*, 27 Tex. 627."

At another point he observes that while the Federal Government has the right to use state highways for all purposes necessary to carrying out Federal powers, general sovereign jurisdiction including power to regulate for public safety resides in the state. The Federal Government in its use must conform to applicable state law unless to do so would prevent or seriously hamper the functioning of the Federal instrumentality. This fact of military or other necessity excusing Federal compliance will be determined by the courts themselves. See *Commonwealth* v. *Closson*, 229 Mass. 329, 118 N. E. 653; *Johnson* v. *Maryland*, 254 U. S. 51, 41 Sup. Ct. 16, 65 L. ed. 126; *Hall* v. *Commonwealth*, 129 Va. 738, 105 S. E. 551; *Ex Parte Willman*, 277 Fed. 819; *United States* v. *Hart*, Fed. Cas. No. 15, 316; See also *Ex Parte Milligan*, 4 Wall. 2, 124, 125, 18 L. ed. 281.

The determination of an army officer that the state or local law shall be disobeyed is not conclusive on the courts in such a matter, but in view of the fact that a soldier's first duty is to obey and not to question orders, his action pursuant to orders should be excused even if in violation of law unless he as an ordinary private soldier should know that the order is illegal and void. *Neu* v. *McCarthy*, *supra*.

In the *Neu* case the Court observed that in time of peace there was no compelling military necessity, obvious or demonstrated, that the convoy pass through the red light. Clearly distinguished are such cases as *State* v. *Burton*, 41 R. I. 303, 103 Atl. 962, L. R. A. 1918F, 559 (a navy dispatch driver who in time of actual war was ordered to proceed with all possible speed, held not violating law although exceeding the local speed limit).

The authority of civil authorities to arrest, try, and convict persons in Federal military services for violations of the "laws of the land" is recognized by the Articles of War. See Articles 54-96, particularly Article 74; 41 Stat. 800-806 (1920), 10 U. S. C. A. § 1526-1568 (1934).

That local ordinances are "laws of the land" for such purposes see 21 Ops. Atty. Gen. 88 (1894); compare *Ex parte Bright*, 1 Utah 145 (1874). For a discussion of other cases involving soldiers taken into civil custody see, *National Defense and Municipal Legal Problems*, Report No. 71, National Institute of Municipal Law Officers, p. 19 and cases there discussed.

Administrative Acts—Initiative and Referendum—Contracts

Regardless of the form the action takes, i. e., ordinance, resolution, or motion, accepting a bid and directing that a contract be entered into is an administrative act and not subject to initiative and referendum. *Read* v. *City of Scottsbluff*, 297 N. W. 669 (Nebr. 1941).

Airports—Tort Liability

While the city of Miami as defendant was given judgment because of contributory negligence of plaintiff, the Court held nevertheless that the city operated the airport in its proprietary capacity and would not enjoy any governmental immunity in its operation. *Peavey* v. *City of Miami; Mogis City Airways* v. *Same*, 1 So. (2d) 614 (Fla. 1941).

Banks—Home Rule—State and Local Relations

A national bank had authority to secure city deposits only if the state law authorized its banks to do so. No law of New York provided such authority, but a local law of the city of Syracuse attempted to provide this authority. It is held that the authority of banks is a matter for general state law which a home rule city has no power to change. *Haight* v. *City of Syracuse*, 38 F. Supp. 244 (D. C. N. D. N. Y. May 29, 1941).

Civil Service—Photographers—Corporation Counsel

The Corporation Counsel of New York may purchase photographs as evidence from commercial photographers in spite of the existence of a civil service list for a position of photographer. *Drummond v. Kern*, 27 N. Y. (2d) 332 (Sup. Ct., Special Term, New York County, 1941).

Licenses—State and Local Relations—Repeal by Implication—Theaters

A local law imposing a license fee on theaters incident to regulation in the interests of public health, safety and morals, including fire prevention, is not repealed by a state law giving regulatory control of fire hazards to a state fire marshal. The features of local regulation other than fire hazards are sufficient basis for the local license. *Hollywood Theater Corp.* v. *City of Indianapolis*, 34 N. E. (2d) 28 (Ind., May 22, 1941).

Mayor—Council—Power to Subpoena

The charter of New York provides for mingled rather than separation of powers. The office of Mayor cannot resist a subpoena duces tecum from a committee of the Council directing the Mayor to testify and produce records in his office. *La Guardia* v. *Smith*, 27 N. Y. S. (2d) 321 (Sup. Ct. Special Term, New York County, 1941).

Meetings—City Council—Notice or Call

Where a charter specifies the manner of service of notice of a special meeting, notification of individual members by telephone is insufficient to call a valid meeting where one member fails to receive the call and another fails to attend under the impression that the meeting is simply a conference. A contract allegedly authorized by the Council at the meeting is not a valid obligation. *Brann* v. *City of Ellsworth*, 19 A. (2d) 425 (Maine, Apr. 15, 1941).

Milk Control—Delegation—Incorporation by Reference

The San Francisco ordinance authorizing the sale and distribution of pasteurized and certified milk is not invalid as to the delegation involved in the definition of "certified milk" as that which conforms to the rules for production and distribution of certified milk adopted by the American Association of Medical Milk Commissions. *Natural Milk Producers Ass'n of California* v. *City and County of San Francisco*, 112 P. (2d) 930 (D. C. App. 1st Dist. Calif., May 1, 1941).

Powers—Compromise—Delegation

A city has no authority to delegate power to an auditor to collect or compromise a claim due the city. A contract to employ an auditor for such a purpose is not binding on a subsequent board of aldermen. *Smith* v. *Mitchell*, *same* v. *City of Louisville*, 1 So. (2d) 725 (Miss. 1941).

Power Districts—Municipal Corporations—Tax Exemption

A power district in Nevada is a "municipal corporation" in the sense used in the state constitution and statutes providing for tax exemption. Property of the power district located within a county is not assessable for taxes. *State* v. *Lincoln County Power District No. 1*, 111 P. (2d) 528 (Nev. 1941).

Salaries—De Facto Officers

Whether or not appointment is legally valid, if a person honestly serves as a bona fide de facto officer he is entitled to the compensation the city is bound to pay as salary to the incumbent. *Petrone* v. *City of Newark*, 19 A. (2d) 450 (Sup. Ct., N. J., Essex County, Apr. 4, 1941).

Tort Liability—Motor Vehicle Inspection—Governmental Function

Where a city is permitted by state law, but not required, to inspect motor vehicles, and where the inspection fee charged is insufficient to defray the whole cost of inspection, the maintenance of a motor-vehicle inspection station is a governmental function and the city is not liable for injuries sustained by an employee caused by presence at station of noxious and poisonous gases. *Wold* v. *City of Portland*, 112 P. (2d) 469 (Ore., Apr. 22, 1941).

WPA—Relief—Corporate Purposes

While it must be recognized that Federal WPA contributions are paid for the purpose of relief, and relief is not a corporate purpose of the Chicago School Board or Park District, nevertheless, taxes levied by these bodies for the purpose of raising funds to be spent for painting and decorating public schools and for labor and materials on park improvements are for corporate purposes. *People* v. *Otis' Estate*, 33 N. E. (2d) 202 (Ill. 1941).

Compare however: An appropriation by the city of Chicago of funds to be expended by various departments of the city under the direction of the Mayor and Comptroller in connection with WPA projects is objectionable, since the only defined purpose is the relief aspect of the WPA program, and the funds as appropriated would be available for any corporate purpose without limitation. *People ex rel. Toman, County Collector* v. *Advance Heating Co.*, 33 N. E. (2d) 206 (Ill. 1941).

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Conventions - - When and Where

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July 22-23.—Buffalo, N. Y.
New York State Association of Chiefs of Police. (Hotel Buffalo.) Sec.-Treas., R. W. Morris, P. O. Box 346, Geneva, N. Y.

July 22-23.—Philadelphia, Pa.
Pennsylvania Chiefs of Police Association. Sec., F. B. Titus, Lansdowne, Pa.

August 5-8.—Eugene, Ore.
Western Institute of Commercial and Trade Executives. (Univ. of Oregon.) Mgr., W. E. Hammond, 333 Pine St., San Francisco.

August 7-9.—Erie, Pa.
American Water Works Association—Western Pennsylvania Section. (Lawrence Hotel.) Sec., E. P. Johnson, 418 Flannery Bldg., Pittsburgh, Pa.

August 14-16.—Provo, Utah.
State Municipal League of Utah. (Hotel Roberts.) Sec., Tom McCoy, Public Safety Bldg., Salt Lake City, Utah.

August 17-23.—Evanston, Ill.
National Institute for Commercial and Trade Organization Executives. (Northwestern Univ.) Sec.-Treas., Clarence R. Miles, 832 First Nat'l Bank Bldg., Chicago, Ill.

August 18-20.—Council Bluffs, Iowa.
League of Iowa Municipalities. Sec.-Treas., Frank G. Pierce, Marshalltown, Iowa.

August 18-21.—Buffalo, N. Y.
International Association of Chiefs of Police. Exec. Sec., Edward J. Kelly, 918 F St., N. W., Washington, D. C.

August 18-22.—Boston, Mass.
Joint meeting. (Mechanics Bldg.) New England Association of Fire Chiefs and the International Association of Fire Chiefs. Address. Daniel B. Tierney, Chairman Exhibit Committee, Fire Dept. Headquarters, Arlington, Mass.

August 26-29.—Washington, D. C.
National Shade Tree Conference. (Mayflower Hotel.) Sec.-Treas., L. C. Chadwick, Ohio State Univ., Columbus, Ohio.

September 1-3.—State College, Pa.
Pennsylvania Water Works Operators' Association. Sec.-Treas., I. M. Glace, 22 S. 22d St., Harrisburg, Pa.

September 3-5.—Jamestown, N. Y.
Municipal Electric Utilities Association of New York State. (Hotel Jamestown.) Sec., T. J. McKee, P. O. Box 686, Jamestown, N. Y.

September 3-5.—State College, Pa.
Pennsylvania Sewage Works Association. (Pennsylvania State College.) Sec.-Treas., Bernard S. Bush, Kirby Health Center, Wilkes-Barre, Pa.

September 10-12.—Traverse City, Mich.
Michigan Municipal League. (Park Place Hotel.) Dir., Herbert A. Olson, 205 South State St., Ann Arbor, Mich.

September 11-12.—Glens Falls, N. Y.
American Water Works Association—New York Section. Fall meeting. (Hotel Queensbury.) Sec.-Treas., R. K. Blanchard, 50 W. 50th St., New York.

September 15-21.—Santiago de Chile, S. A.
Pan American Congress of Municipalities. Address: Earl D. Mallery, Exec. Dir., American Municipal Assn., 1313 E. 60th St., Chicago.

September 18-19.—Santa Fe, N. Mex.
American Water Works Association—Rocky Mountain Section. (La Fonda Hotel.) Sec., B. V. Howe, State Office Bldg., Denver, Colorado.

September 18-19.—Mansfield, Ohio.
Ohio Conference of Sewage Treatment. (Mansfield-Leland Hotel.) Sec., B. M. McDill, Dept. of Health, Columbus, Ohio.

September 19-20.—Providence, R. I.
New England Sewage Works Association. (Providence-Biltmore Hotel.) Sec.-Treas., LeRoy W. Van Kleeck, State Dept. of Health, Hartford, Conn.

September 23-25.—Atlanta, Ga.
Illuminating Engineering Society. (Atlanta-Biltmore Hotel.) Gen. Sec., A. D. Cameron, 51 Madison Ave., New York.

September 25-26.—Boston, Mass.
New England Water Works Association. (Hotel Statler.) Sec., Frank J. Gifford, 613 Statler Bldg., Boston, Mass.

September 24-26.—Grand Rapids, Mich.
American Water Works Association—Michigan Section. (Hotel Pantlind.) Sec., M. N. Gerardy, Water Board Bldg., Detroit.

***September 24-26.—Owensboro, Ky.**
Kentucky Municipal League. (Hotel Owensboro.) Exec. Sec., Carl B. Wachs, Univ. of Kentucky, Lexington, Ky.

September 27-Oct. 2.—Atlantic City, N. J.
American Transit Association. (Haddon Hall.) Gen. Sec., Guy C. Hecker, 292 Madison Ave., New York.

***September 29-October 2.—Detroit, Mich.**
American Association of State Highway Officials. (Statler Hotel.) Sec.-Treas., W. C. Markham, 1220 Nat'l Press Bldg., Washington, D. C.

September 29-October 2.—St. Louis, Mo.
International Municipal Signal Association, Inc. (Hotel Jefferson.) Sec., Irvin Shulsinger, 8 E. 41st St., New York.

September 29-October 3.—Baltimore, Md.
National Recreation Association. (Lord Baltimore Hotel.) Sec., Howard S. Braucher, 315 Fourth Ave., New York.

October 3-7.—Chicago, Ill.
Institute of Traffic Engineers. (Hotel Stevens.) Sec.-Treas., W. Graham Cole, 60 John St., New York.

October 6-9.—New Orleans, La.
American Institute of Park Executives and Affiliated Organizations. (Roosevelt Hotel.) Exec. Sec., Will O. Doolittle, Box 422, Tulsa, Oklahoma.

***October 6-8.—Racine, Wis.**
American Water Works Association—Wisconsin Section. (Hotel Racine.) Sec., L. A. Smith, City Hall, Madison, Wis.

October 6-10.—Chicago, Ill.
National Safety Council. M'ng Dir., W. H. Cameron, 20 N. Wacker Drive, Chicago, Illinois.

October 8-10.—Lincoln, Nebr.
League of Nebraska Municipalities. Sec.-Treas., C. E. Beals, 204 Brownell Bldg., Lincoln, Nebr.

October 9-11.—Minneapolis, Minn.
American Water Works Association—Minnesota Section. (Nicollet Hotel.) Address: Sec.-Treas. Ronald M. Finch, Wallace & Tiernan Co., Inc., 414 Flour Exchange, Minneapolis, Minn.

October 9-11.—New York City.
Federation of Sewage Works Associations. (Hotel Pennsylvania.) Exec. Sec., W. H. Wisely, Box 18, Urbana, Ill.

***October 9-10.—Sioux Falls, S. Dak.**
League of South Dakota Municipalities. (Carpenter Hotel.) Sec., A. E. Mead, Univ. of South Dakota, Vermilion, S. Dak.

October 12-14.—Virginia Beach, Va.
League of Virginia Municipalities. (Cavalier Hotel.) Exec. Sec., Morton L. Wallerstein, 902 Travelers Bldg., Richmond, Va.

October 12-16.—St. Paul, Minn.
National Tax Association. (Lowry Hotel.) Address: Sec., Raymond E. Manning, Library of Congress, Washington, D. C.

October 13-16.—Fort Worth, Texas.
American Water Works Association—Southwest Section. Sec., Lewis A. Quigley, 3320 W. Berry St., Fort Worth, Texas.

October 13-16.—Sacramento, Calif.
League of California Cities. Sec., Richard Graves, 2121 Allston Way, Berkeley, Calif.

October 14-17.—Atlantic City, N. J.
American Public Health Association. (Convention Hall and Auditorium.) Exec. Sec., Dr. Reginald M. Atwater, 50 W. 50th St., New York.

October 15-17.—Atlantic City, N. J.
Pennsylvania Water Works Association. (Haddon Hall.) Sec., Dr. F. Herbert Snow, 507 Telegraph Bldg., Harrisburg, Pa.

October 15-17.—Knoxville, Tenn.
Tennessee Municipal League. Sec., C. C. Gilbert, 1014 Stahlman Bldg., Nashville, Tenn.

October 16-18.—Atlantic City, N. J.
American Water Works Association—New Jersey Section. Sec., C. B. Tygert, P. O. Box 178, Newark, N. J.

October 16-17.—Kitchener, Ont.
The Canadian Institute on Sewage and Sanitation. (Walper House.) Sec.-Treas., Dr. A. E. Berry, Dept. of Health, Toronto, Ontario.

***October 16-17.—Eau Claire, Wis.**
League of Wisconsin Municipalities. (Eau Claire Hotel.) Sec., Frederick MacMillin, 30 E. Johnson St., Madison, Wis.

October 18.—Morgantown, W. Va.
League of West Virginia Municipalities. (City Hall.) Sec., Hume K. Nowlan, Hinton, W. Va.

October 19-22.—Jacksonville, Fla.
National Association of Assessing Officers. Acting Exec. Dir., Albert W. Noonan, 1313 E. 60th St., Chicago, Ill.

October 19-22.—Los Angeles, Calif.
National Association of Commercial Organization Secretaries. (Biltmore Hotel.) Asst. Sec.-Treas., Mrs. Norma McKellops, 1615 H St., N. W., Washington, D. C.

October 20-22.—Cedar Rapids, Iowa.
American Water Works Association—Missouri Valley Section. (Montrose Hotel.) Sec., Earle L. Waterman, Univ. of Iowa, Iowa City, Iowa.

October 22-24.—Chicago, Ill.
The American Municipal Association. Exec. Dir., Earl D. Mallery, 1313 E. 60th St., Chicago, Ill.

October 22-25.—Fresno, Calif.
American Water Works Association—California Section. (Fresno Hotel.) Sec., Gerald E. Arnold, San Francisco Water Dept., Millbrae, Calif.

October 26-29.—New Orleans, La.
American Public Works Association. (Roosevelt Hotel.) Acting Exec. Dir., Norman Hebden, 1313 E. 60th St., Chicago, Ill.

October 27-29.—Nashville, Tenn.
American Water Works Association—Kentucky-Tennessee Section. (Andrew Jackson Hotel.) Sec.-Treas., Howard D. Schmidt, 420 6th Ave., N., Nashville, Tenn.

November 3-5.—High Point, N. C.
Joint meeting. (Hotel Sheraton.) American Water Works Association—North Carolina Section and North Carolina Sewage Works Association. Sec., R. S. Phillips, Box 1170, Durham, N. C.

November 3-4.—Pittsburgh, Pa.
Engineering Society of Western Pennsylvania. (William Penn Hotel.) Gen. Chairman, H. M. Olson, 171 Longue Vue Drive, Mt. Lebanon, Pittsburgh, Pa.

November 6-7.—Baltimore, Md.
American Water Works Association—Four States Section. Sec., Lloyd Nelson, U. S. Pipe & Foundry Co., Broad and Chestnut Sts., Philadelphia, Pa.

November 25-27.—Hollywood, Fla.
International City Managers' Association. (Hollywood Beach Hotel.) Exec. Dir., Clarence E. Ridley, 1313 E. 60th St., Chicago, Ill.

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* First appearance of notice on this page.

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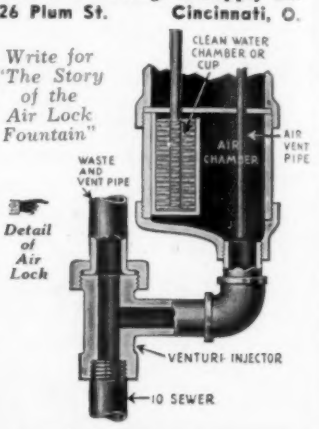

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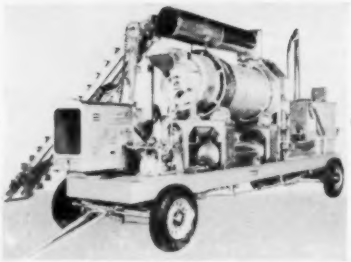

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Suggestions for State and Local Fire Defense.—Fire Defense Bulletin No. 1 prepared by the Advisory Committee on Fire Defense, Division of State and Local Cooperation, Office for Emergency Management, Washington, D. C. Apply to Supt. of Documents, Washington, D. C. vii + 27 pp. **10c.**

This is the first of a series of bulletins on fire defense—one of the series of bulletins being issued by the Division of State and Local Cooperation on aspects of civilian defense. The Foreword states two reasons for issuing the report now: to protect the present defense program from interruption by fire; to set up in advance a fire-defense organization for total national defense. The five sections of the bulletin discuss the Federal, state, and local responsibilities for the program; points to be covered in a survey of fire defense; mutual aid; general fire prevention and protection activities; and organization and training of auxiliary fire-fighting forces.

Labor

Local Progress in Labor Peace.—By William L. Nunn, University of Newark, with an introduction by C. A. Dykstra, Chairman, National Defense Mediation Board. National Municipal League, 299 Broadway, New York. 1941. 27 pp. 35c.

Reprinted here are a series of articles which appeared originally in the *National Municipal Review*, telling of the methods and accomplishments of several cities in dealing constructively with their labor problems. The work of the Toledo Industrial Peace Board and that of the Newark Labor Relations Board are described in separate articles. The third article examines other methods used by cities in solving labor problems—the hands-off policy, outside mediation agencies, mediation by city officials, special municipal mediators, and panels of citizens. A model ordinance for the creation of a municipal labor relations board is included.

Police and Defense

Mobilizing Police for Emergency Duties—A Program for State and Local Governments.—By Bruce Smith. Institute for Public Administration, New York. 1940. 19 pp.

This summary of suggestions for police mobilization is based on materials collected by the author during participation in mobilization programs developed by New York, Virginia and New Jersey. It discusses counter-espionage and anti-sabotage, policing disorders and disasters, and dangers in the use of vigilantes, and recommends a state-wide plan for police mobilization, with lessons to be learned from programs already in effect.

Police Department Procedure

Manual of Police Records—A Concise Outline of Basic Record Procedures.—Prepared by the Federal Bureau of Investigation, U. S. Department of Justice, Washington, D. C. 1940. 51 photo offset pp.

A concise outline and general explanation of the use of: complaint and investigation reports; lost and stolen property index; arrest and identification records; summaries and special reports; miscellaneous records and reporting problems.

Police and Fire Training

Pre-Service Courses for Candidates for the Police and Fire Departments, 1941-1942.—Division of Public-Service Training, The College of the City of New York, Amsterdam Ave. and 138 St., New York. 1941. 13 pp. Free.

Description of two-year courses preparing for police and fire service, and leading to a certificate of public service.

Transit Development

Fares, Please!—From Horse-Cars to Streamliners.—By John Anderson Miller, Editor, Transit Journal. D. Appleton-Century Co., New York. 1941. xvii + 204 pp. $3.50 from THE AMERICAN CITY.

Some hundred years ago, the citizens of New York engaged in the "popular and inexpensive form of winter sport" of hurling snowballs at the helpless passengers in horse-drawn sleighs; and change from money paid for fare—sometimes incorrect—was passed back to the passenger in the horse-drawn omnibus, in an envelope through a small hole in the roof. Progress in America, from this first early type of transit to the modern streamlined, efficient motor and trolley-buses is a story of romance and fast changes, told comprehensively for the first time in this book. With many illustrations and in lively style, it follows the development of the horse-drawn omnibus, the omnibus on rails, the cable-car, the early electric car, the elevated railway, subway, trolley, motor and trolley-bus, unusual types of transit, how emergencies are met, and the handling of transportation problems. (See the article by the author of this book on page 91.)

Traffic Accidents

Prevention of Night Traffic Accidents.—National Safety Council, Inc., 20 N. Wacker Drive, Chicago, Ill. 1940. 23 pp.

Contrary to the decline in daytime traffic accidents since 1930, there has been an upward trend in number of night accidents. Prepared by the Committee on Night Traffic Hazards, which was organized in 1936 to study the many angles of the problem, this report presents a condensed discussion of night traffic safety, and recommends methods of prevention of night collisions.

Automobile Driver Control

The Suspension and Revocation of Drivers' Licenses.—By T. Elmer Transeau, Director, Bureau of Highway Safety, Commonwealth of Pennsylvania, Harrisburg, Pa. 15 pp., mimeo.

Presented before the Eastern Conference of Motor Vehicle Administrators at Hartford, on May 10, this paper describes one phase of the work of suspension and revocation of drivers' licenses—the set-up and methods used in the various states, in conducting hearings for those accused of negligence or violation of the motor code.

Driving Manual

Automobiling.—By Burton W. Marsh, Director, Safety and Traffic Engineering Department, American Automobile Association. Merit Badge Series. Boy Scouts of America, 2 Park Ave., New York. 1941. 91 pp.

Written for Boy Scouts wanting to qualify for the Automobile Merit Badge, this is an elementary, readable handbook for the beginning driver, covering the driver himself, the pedestrian, the mechanics of the car, the driving process, and various types of jobs in the driving field.

Crime Prevention

Criminal Youth and the Borstal System.—By William Healy, M. D., and Benedict S. Alper. The Commonwealth Fund, New York. 1941. vi + 251 pp. $1.50.

A recent study reveals that 80 per cent of the graduates of one of our supposedly best reformatories commit further offenses. This book discusses the inadequacy and failure in handling youthful criminals in this country, and describes in detail, and evaluates, the Borstal system of treatment for delinquents, which has been successful in Great Britain.

Air-Raid Protection

Protective Construction—Bulletin No. 1, Structures Series, Civilian Defense. Prepared by the War Department with the Assistance and Advice of Other Federal Agencies. Issued by the Division of State and Local Cooperation, Office for Emergency Management. Apply to Supt. of Documents, Washington, D. C. 1941. 43 pp. 25c.

Not intended as a signal for any locality to begin work on the protective structures described therein, this bulletin presents basic information, gathered from European sources, on the methods, plans and procedures that can be followed by American cities should protective construction against aerial attack become necessary in the future. The first part of the publication describes types of aerial attack; the second, the measures of defense against aerial attack. For extracts and a description of this pamphlet, see p. 85.

1941 Housing

Housing Yearbook, 1941.—National Association of Housing Officials, 1313 E. 60th St., Chicago, Ill. vii + 405 pp. $3.50.

The 1941 Yearbook is much larger than previous editions—the principal difference between it and its predecessors being the inclusion of a great amount of material on defense housing. Reviewed in condensed reference form are the activities and developments of state and local housing organizations and of the various Federal agencies dealing with housing, national unofficial housing agencies and committees, and housing associations. Work of the National Association of Housing Officials is reported on; and a 62-page directory of housing agencies throughout the country, and their officials, is given.

Defense Housing

Addendum to Defense Housing Digest.—National Association of Housing Officials, 1313 E. 60th St., Chicago, Ill. 1941. 54 pp.

The second and final addendum to the Defense Housing Digest published in January of this year. The completed document contains a compilation of legislation and administrative rulings relative to defense housing, covering a period of about a year, with results and comments. A Defense Housing Digest II is contemplated.

Trailer Study

Mobile Homes—A Study of Trailer Life.—By Donald Olen Cowgill, Associate Professor of Sociology, Drury College. American Council on Public Affairs, Washington, D. C. 1941. vii + 127 pp. Paper; $2.00.

Has the trailer brought about a reduction of tax sources, or discouraged housing construction? Are trailerites, like other transient groups, a disorganized, unstable section of the population? These are some of the questions that Professor Cowgill takes up in this sociological study made during two years' living in a trailer. It describes the trailer way of life, its effect on the trailerite and his family; it discusses the trailer community, and its relation to the larger community.

Movable Houses

TVA Demountable Cottage.—Tennessee Valley Authority, Knoxville, Tenn. 1941. 6 pp., mimeo.

The TVA has developed as a demonstration of their practicability six demountable cottages—four duplex and two single-family types—which can be moved section by section. They are described in this paper in detail—materials of construction, method of construction of parts, moving, loading and unloading, assembling. Illustrations are included.

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St. Louis Insurance Practices

Municipal Insurance Practices.—Mayor's Survey Committee. Governmental Research Institute, St. Louis, Mo. 1940. 41 *pp., mimeo.*

This is a survey of insurance practices in St. Louis, with recommendations for the future. It describes the present insurance coverage on city properties and buildings, practices in other cities, loss experience in St. Louis, and alternative plans of self-insurance with an "insurance fund" and without one. Possible savings under a system of self-insurance are estimated.

Municipal Finance

Revenue Bonds.—By Frederick L. Bird. The Haynes Foundation, Los Angeles, Calif. 1941. 43 *pp.* 15c.

This is a condensed discussion of the principal feature of revenue-bond financing—a method of financing being used increasingly by cities. It explains the origin of revenue bonds and what they are, outlines their expanding use by municipalities. The law relating to these bonds is analyzed, and their financial successes and failures are discussed, their appropriate and questionable uses, planning the project and selling the bonds, and keeping the project sound. A bibliography is included.

Debt

State and Local Government Debt: 1940.—*State and Local Government Special Study No. 13, Bureau of the Census, U. S. Department of Commerce, Washington, D. C.* 1941. 79 *pp.*

This study factually reports the behavior of state and local debt during the past decade, analyzes the impact of the depression and other events upon debt trends, and shows the debt status of large public units and classes of government as at June 30, 1940.

Bibliography

A Selected List of Recent References on the Cost of Government in the United States: Federal, State and Local.—Compiled by Grace Hadley Fuller, under the direction of Florence S. Hellman, Chief Bibliographer, Division of Bibliography, Library of Congress, Washington, D. C. 1940. 40 *pp., mimeo.*

Three hundred and seventy-seven references, supplementary to the list of 1934 compiled by the Division, on the general subject of the cost of government, on cost of government at the three levels, and bibliographies on the subject.

Illinois Local Finances

State Supervision of Local Finance with Suggestions for Illinois.—Part II of the March, 1941, *issue of "Men and Events," the Bulletin of the Union League Club of Chicago, Ill.* 16 *pp.*

Recommendations for a state supervisory agency, and for state supervision of Illinois local finance, through budgeting, accounting, auditing, and reporting, are presented in this report, prepared by the Committee on Public Finance of the Union League Club of Chicago. The type of supervision that is now practiced in Illinois and other states is summarized.

Assessment

Handbook for Pennsylvania Assessors.—Prepared for the Committee on Pennsylvania Assessment Manual. Published by Pennsylvania Government Administration Service, 34 Blanchard Hall, 36th and Walnut Sts., Philadelphia, Pa. 1941. 120 *photo offset pp.*

This handy manual, prepared for general distribution to Pennsylvania assessors, discusses the function of assessment and the assessor's duties; sets forth a method of assessment; explains the process of revision, equalization and appeals; and describes the role of the county commissioners. Individual sections of the handbook are devoted to the assessment of urban real property, rural real property, and personal property and occupations. The first considers basic unit values, basic standards for valuing individual properties, adding land and building values together and transcribing them on the assessment rolls, and keeping the rolls up to date.

British Planning

Town Planning.—By Thomas Sharp. Pelican Books. Penguin Books, Ltd., 41 E. 28th St., New York. 1940. *xiv* + 152 *pp.* 25c, *paper cover,* 4½ *by* 7⅛ *in.*

The author, English planning consultant and lecturer at Durham University, gives in this book a concise, readable, everyman's presentation of planning principles for town, suburb and country—principles which he believes should be firmly established *now* for post-war reconstruction. Included in the brief volume is a sketch of English town and country building in the past, its present status, and future possibilities. Recommendations for a national planning organization are outlined in the last chapter.

British Civil Defense

British Cities at War.—By James L. Sundquist for the American Municipal Association. Public Administration Service, 1313 *E. 60th St., Chicago, Ill.* 1941. *vi* + 110 *pp.* $1.00.

Problems faced by British municipal officials in time of war; how local defense measures and ordinary services have worked in this time of crisis; the effect of active warfare on British cities both bombed and not bombed;—these are some of the questions covered in this report, compiled from information in British periodicals and given by several first-hand observers. It describes the pre-raid and post-raid civil defense organization and structure, the place of volunteer organizations, precautionary measures and services connected with air raids, other special wartime activities such as municipal farming and restaurants, normal municipal functions, and planning for reconstruction.

1940 Recreation

Recreation—Year Book Number, June, 1941. *—National Recreation Association,* 315 *Fourth Ave., New York.* 83 *pp.* 50c.

Information on recreation in 1,116 communities is contained in this survey of 1940 public and private recreation. The Year Book reports on the popularity of different sports with the American public; on the administrative set-up, facilities, and expenditures of recreation agencies; and on the number and type of recreation leaders throughout the country. Recreation connected with defense is discussed.

City Government Study

Municipal Government and Administration in Alabama.—By Weldon Cooper, Assistant Professor of Political Science, University of Alabama. Bureau of Public Administration, University of Alabama, University, Ala. 1940. *ix* + 252 *pp.*

Another of the several studies published recently on city government in the various states of the country. This one surveys 105 of the 277 cities in Alabama, selected from scattered sections of the state. It discusses: Urban Growth; Legal Status of the Municipality; Government and Politics; Administrative Organization; Finance—Current Operations and Debt; Civil Service; Functions—Public Safety, Public Works, Social Services; and Intergovernmental Relations. A summary and conclusions present recommendations for improvement of Alabama city government.

Trichinosis Study

Meat for Millions.—First Report of the New York State Trichinosis Commission, Thomas C. Desmond, Chairman, Albany, N. Y. 1941. 282 *pp.*

One out of every six persons in the United States is infected with trichinae, the trichinosis germs. This publication presents recommendations for garbage disposal, feeding of hogs, and meat inspection, with proposed legislation, for the prevention of the disease in New York State. Reports are made of studies and investigations prepared for the Commission by authorities in the field, and covering the prevalence of trichinosis, its relation to garbage, and various means for its possible control. One chapter also discusses the disease tularemia, contracted by eating infected meat.

Landscape Architecture

Landscape Architecture in the Modern World.—By Karl B. Lohmann, Professor of Landscape Architecture, University of Illinois. The Garrard Press, Champaign, Ill. 1941. 197 *pp.* $2.50 *from* THE AMERICAN CITY.

Unlike many books on landscape architecture which are entirely devoted to the treatment of planting or other particular phases, this one gives a broad general introduction to the subject—basic principles, present-day trends, and means through which effective results can be obtained. Readers of THE AMERICAN CITY will be particularly interested in the discussion of landscape art and open spaces in the city—neighborhoods and housing, parks, outdoor theaters, gardens, zoos, golf courses, airports, cemeteries, and planning of water forms.

Public Budgeting

The Role of Budgeting in Government.—By Grover Wm. Ensley. The Tax Foundation, 30 *Rockefeller Plaza, New York.* 1941. 28 *pp., mimeo.*

The first two chapters of this preliminary report on a study of public budgeting in the United States, define budgeting and indicate the importance of its effective use. The principal portion of the report is devoted, however, to a description and notes on publications in the field, covering material classified under the headings—General, Federal, State, and Local.

Citizens' Conference

Explorations in Citizenship—Proceedings of the Citizens' Conference on Government Management, Estes Park, Colo., June 17-22, 1940.—*Edited by A. D. H. Kaplan. School of Commerce, Accounts and Finance, University of Denver, Denver, Colo. xxvii* + 501 *pp.* $3.00 *from* THE AMERICAN CITY.

Part of the citizen-education program of The Department of Government Management, the Citizens' Conference has as its purpose to provide opportunity for discussion between citizens representing every segment of the community, and public officials; to examine the problems of citizens' groups; and to provide citizens with information on government. The second conference reported here, held largely in the form of informal round-table discussions, covered the following large general subjects: broad questions of national policy; measuring government; local-government credit; balancing the state and local tax structure; citizens' groups; national and state pressures on local government; civil service standards; public relief; how shall business be taxed.

Cincinnati Citizens Committee

Citizen Organization for Political Activity—The Cincinnati Plan.—National Municipal League, New York City. Revised edition, 1941. 48 *pp.* 35c.

At a time when the citizen's importance in government is being increasingly recognized and stressed, the old story of how Cincinnati changed from the "worst-governed" to the "best-governed" city in America has a new significance, and makes particularly welcome this revision of the 1934 pamphlet. The organization and campaign methods of the Cincinnati City Charter Committee are outlined in detail, and in the appendices new material includes the committee's revised organization plan, campaign for funds, and political campaign plan.

Citizen Organizations

Community Organization—May, 1941, *issue of Community Councils in Action.—American Association of Adult Education,* 60 *E. 42nd St., New York.* 28 *pp.* 15c.

Examples in different cities of community organization for defense, for study of education, for community betterment, for recreation, in the TVA, in migratory labor camps, in city neighborhoods, for public housing, and in an industrial area. A brief description is given of the national organizations that are seeking to foster community coordination.

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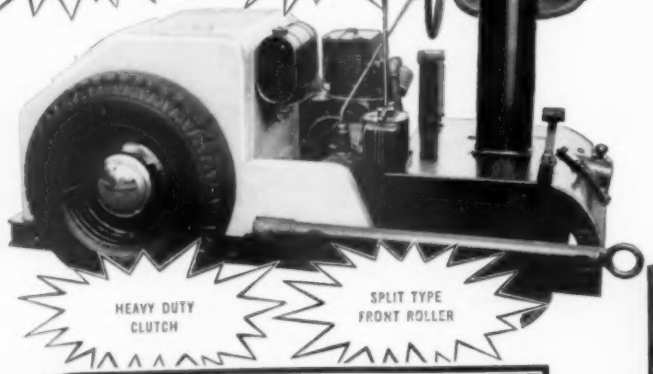

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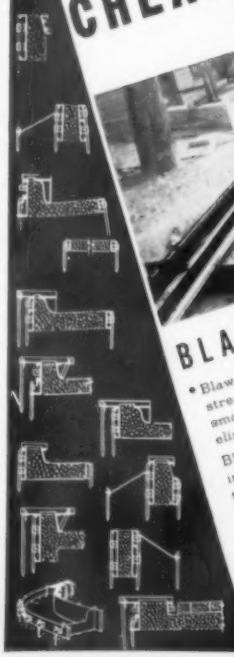

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Town Government Surveys

Town Government in New Hampshire (Preliminary Edition).—Prepared by the New Hampshire Historical Records Survey Project, Division of Professional and Service Projects, Work Projects Administration, Hoyt Administration Building, Manchester, N. H. Sponsored by the University of New Hampshire. 1940. 151 *pp.*

Town Government in Maine (Preliminary Edition).—Prepared by the Maine Historical Records Survey Project, Division of Professional and Service Projects, Work Projects Administration, 76 Pearl St., Portland, Maine. 1940. *ii* + 206 *pp.*

Based largely on the laws of New Hampshire and Maine, these volumes analyze the powers and duties of the more common town offices in these states, from the colonial period to the present. The one on Town Government in Maine also describes the three most common types of municipal government in the state—towns, plantations, and village corporations; that on New Hampshire includes a general chapter on the history of town government in that state. Final editions will contain a more complete coverage of offices, a more detailed treatment of the laws establishing them, and of the court decisions affecting them. The publications are intended to be used in connection with the inventories of town archives, which list town records, and outline the historical background, organizations and functions of the governments of towns in the two states.

Zoning in Kansas

Twenty Years Zoning in Kansas (1921 *to* 1941).—*By Albert B. Martin, General Counsel, The League of Kansas Municipalities, 3 Fraser Hall, University of Kansas, Lawrence, Kans.* 1941. 35 *pp.* $2.00.

The first attempt to examine the zoning ordinances of the cities in any one state, this study appraises the success of the 36 zoning ordinances in effect in Kansas, in communities ranging in population from 1,712 to 118,780. It reviews the principal features of state statutes, and the court decisions, and traces the development of zoning in each community, the reasons for and objections to its adoption, the changes that have been made in ordinances, and the efforts of planning and zoning commissions to maintain zoning standards.

City Government Conference

Local Government in Massachusetts.—Bureau of Public Administration, Massachusetts State College, Amherst, Mass. 1941. 67 *pp., mimeo.* 50c.

The papers published here were presented at the Fifth Annual Conference on Current Governmental Problems, held at Massachusetts State College, on November 15 and 16, 1940. They cover municipal finance, reporting, county issues, elections, town meetings, planning and zoning, the role of the selectmen, town-manager government, and town forests.

Intergovernmental Relations

State-Local Fiscal Relations in Illinois.—By Neil H. Jacoby, Rex J. Morthland, I. M. Labovitz, Mildred Fishman, Daniel Scheinman, Clarence Philbrook, W. F. Lougheed, George W. Mitchell, G. Leland Bach. Edited and with Some Observations on Intergovernmental Fiscal Relationships by Simeon E. Leland. The University of Chicago Press, Chicago, Ill. 1941. *xxi* + 453 *pp.* $2.00 *from* THE AMERICAN CITY.

There are more units of government in Illinois than in any other state in the Union. Having as its object the appraisal of the adequacy and efficiency of relationships between state and local levels, this well-packed, comprehensive volume has four main parts: Division of Functions; State Financial Assistance; State Financial Control; and, finally, conclusions and recommendations for changes in present fiscal relations. Throughout the book, the point of view of the local fiscal officer has been adopted. The study is the product of joint-research, made with the financial assistance of the Social Science Research Committee of the University, of Chicago, and with the aid of the Illinois Tax Commission.

Urban Density

Let Us Build a More Spacious City.—By Henry S. Churchill, on behalf of the Citizens' Housing Council of New York, 470 Fourth Ave., New York. 1941. 3 *pp., mimeo.* 5c.

This statement was submitted at the meeting to commemorate the twenty-fifth anniversary of zoning in New York. It draws up some terse conclusions as to present trends in urban population growth, urban density, and decentralization. It puts squarely, on the one hand, the ill effects of over-concentration and the necessity of more open space, and on the other hand, the need for adapting the political, economic and fiscal pattern of the city to the region into which it is evolving.

Roadside Development

How Municipalities Can Aid in Roadside Control Along State Highways.—New Jersey State Chamber of Commerce, Newark, N. J. 1940. 16 *pp.*

"Shoestring" development along main highways in New Jersey is causing traffic difficulties and a reduction in safety, to the extent that the state must soon duplicate these routes. This small booklet outlines a program for the prevention of such roadside blight, which it recommends for sponsorship by local chambers of commerce. The problem is analyzed, and three main means of roadside control are described with illustrations: protection through zoning; control of adjoining subdivisions; and park strips along highways.

Regional Planning Education

Two free mimeographed pamphlets by Oscar Sutermeister, recently published by the Department of Fine Arts, Harvard University:

Scope of Regional Planning. Preliminary edition, 1940. 19 *pp.*

"Being certain notes on the fields of knowledge basic to the practice of regional planning," this pamphlet lists courses given at Harvard University that are within or related to the field of regional planning.

Reading Lists in Regional Planning. 1941. 32 *pp.*

Contained in this pamphlet are materials used in an introductory survey course in regional planning given at Harvard Summer School. They consist of a 3-page definition of regional planning, a schedule of the lectures given as part of the course, bibliography for 17 aspects of the subject, and an examination.

Housing and Planning Publication

Agenda for Western Housing & Planning.—Published monthly by the California Housing & Planning Assn., 948 Market St., San Francisco, Calif. Vol. 1, No. 1, April 20, 1941. 8 *pp. Subscription with membership, $2 to $10, according to class of membership.*

This is the first issue of a lively, attractive, news magazine "of fact, interpretation and action." Intended for the layman, it is published by the non-profit California Housing and Planning Association, composed of representative California citizens. Interesting items in this number tell the story of public housing in the state, discuss the defense housing problem, and relate incidents in the lives of persons living in public housing projects.

California Elections

Direct Primary Elections.—By Arthur Harris and Carl Uhr.—1941 Legislative Problems, No. 3, published by Bureau of Public Administration, University of California, Berkeley, Calif. 1941. 35 *pp., mimeo.*

Forty-six states have direct primary election laws. This study, prepared at the request of California legislators, discusses four problems which have arisen in connection with these laws in this state: the desirability of permitting candidates to seek the nominations of several parties in the primary; the advisability of extending non-partisan nominations to state offices; the use of an "open" rather than a "closed" primary ballot; and the adoption of a second or "run off" primary to insure a majority nomination. Practices in other states are analyzed and appraised.

Accounting for Libraries

Library Costs and Budgets—A Study of Cost Accounting in Public Libraries.—By Emma V. Baldwin, formerly of Brooklyn Public Library, and William E. Marcus, Chairman of the Board of Trustees of Montclair Public Library. R. R. Bowker Co., New York. 1941. *xii* + 201 *pp.* $3.00 *from* THE AMERICAN CITY.

Based on a study of the operation of 37 libraries, this book presents suggested criteria by which the efficiency of a library may be appraised—by which comparisons may be made, routine operations standardized, and waste checked. The reasons for the need of standards for evaluating library service are discussed, the study of the 37 libraries is described, and the method of determining unit costs of cataloging, of circulation of books, of reference work and assistance to readers, is outlined. The study was made possible by grants from the Carnegie Corporation and the assistance of the participating libraries.

Taxation Study

An Analysis of Ad Valorem Property Tax Bases in Ft. Worth.

An Analysis of Ad Valorem Property Bases in Dallas.—Both prepared by the Bureau of Municipal Research, The University of Texas, with the assistance of the Work Projects Administration. The University of Texas Press, Austin. 1941. 99 *pp.*, 83 *pp., respectively.*

Revision of the outmoded ad valorem tax laws in Texas cities is recommended in these studies of two selected cities in the state. In each case, assessment techniques are described and evaluated, the difficulties and problems of the assessor are disclosed, the assessment process is evaluated in detail by comparing the sale price of property with the full assessed value of the same property; the distribution of the ad valorem tax is shown; tax-exempt properties are classified and examined. Discrepancies and weaknesses of the present assessment system are pointed out.

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Recreation for Youth

Time on Their Hands: A Report on Leisure, Recreation and Young People. Prepared for the American Youth Commission by C. Gilbert Wrenn and D. L. Harley. Published by the American Council on Education, 744 Jackson Place, Washington, D. C. 1941. 267 *pp.* $2.00.

What do young people do with their spare time, what recreational facilities for them exist in the country, and what are needed, are some of the questions answered in this study of youth and private and public recreation at all government levels. Chapter heads are: The New Meaning of Recreation; The Recreational Needs of Youth; Recreation in a Modern World; Recreation Through Community Agencies; Community Planning; State Functions and Agencies; Federal Functions and Agencies; Major Objectives, and Recommendations for Recreational Planning. (See p. 70.)

Safe Celebrations

The Community Celebrates Hallowe'en.—National Recreation Association, 315 Fourth Ave., New York. 1940. 7 *pp., mimeo.* 15c.

Saving hundreds of dollars in property damage yearly, many communities conduct constructive Hallowe'en celebrations which divert children from the usual trouble-making associated with the day. This pamphlet describes briefly community Hallowe'en festivities in twenty cities of different sizes, and gives suggestions for such programs on a neighborhood or community-wide basis.

City Recreation Survey

The last two volumes of the Chicago Recreation Survey, a project sponsored jointly by the Chicago Recreation Commission and Northwestern University:

Recreation by Community Areas in Chicago, Volume IV.—By Arthur J. Todd, Chairman, Department of Sociology, Northwestern University, in collaboration with William F. Byron, Chairman, Division of Social Work, Northwestern University, and Howard L. Vierow, Director, Chicago Recreation Survey. Conducted under auspices of the Work Progress Administration, National Youth Administration, and Illinois Emergency Relief Commission. 1939 (*just received*). 421 *pp.*

Recommendations adopted by the Chicago Recreation Commission, on the basis of the Findings of the Chicago Recreation Survey, and Summary of Findings, Volume V.—Edited by Arthur J. Todd, Chairman, Department of Sociology, Northwestern University. 1940 (*just received*). 98 *pp.*

These are the last two of the five volumes of the extensive and comprehensive, six-year survey of Chicago recreation. The first three volumes dealt with public, commercial and private recreation. The fourth volume breaks down the information in the first three volumes according to the 75 community areas into which Chicago is divided. It consists of maps, tabulations, and photographs, showing the general social condition of the areas, their recreation facilities of all types, and their zoning in relation to these facilities. The fifth volume presents the summary of findings of the other four volumes, and recommendations for recreation planning, facilities and activities; and for financial, personnel and regulation aspects.

State Government Information

The Book of the States, 1941-1942. *Volume IV.—The Council of State Governments, 1313 E. 60th St., Chicago, Ill.* 1941. *xii* + 423 *pp.* $3.50.

The three parts of this reference manual and yearbook on state government report activities of the Council of State Governments and its 44 commissions on interstate cooperation; contain a 15-page bibliography on state-government problems and a roster of state administration officials classified by function, title and agency duties; and, in the longest part, record developments and activities in state government during the last two years, and present detailed information and tabulated data on its many aspects—organization, legislation, finance, elections and voting, public welfare, etc.

Other Reports Received

BALTIMORE, MD.—The Ordinance of Estimates 1941, with Detailed Statements of the Appropriations for the Maintenance of the Government of the City of Baltimore, 1941. 238 pp.

BERGEN COUNTY, N. J.—Procedure and Regulations, Subdivision of Land, County and Local Authority. County Planning Board. 1940. 21 pp.

BRONXVILLE, N. Y.—Annual Report, Board of Trustees, year ending May 31, 1941. 30 pp.

CINCINNATI, OHIO.—Annual Report, City Manager, 1941. 88 pp.

CLEVELAND, OHIO.—Regional Planning—Progress Report, Number 4, year ending April 1, 1941. Regional Association of Cleveland, Housing-Center, The Mall. 1941. 11 pp.

CONCORD, N. H.—Annual Report, 1940. 80 pp.

DAVIDSON COUNTY, TENN.—Planning in Davidson County—A Report of the First Year's Work of the Davidson County Planning Commission. The Commission, Nashville, Tenn. 1940. 30 pp.

DETROIT, MICH.—A Master Plan for Detroit, City Plan Commission. 1941. 29 pp.

—A Quarter-Century of Citizen Concern with Government—A Preface and a Bibliography of the Detroit Bureau of Governmental Research, 1916-1941. The Bureau, 5135 Cass Ave. 62 pp.

DULUTH, MINN.—Land Platting History, 1856-1939. Duluth City Planning Department. 70 pp.

FLINT, MICH.—Annual Report, 1940. 48 pp.

HAMILTON, N. Y.—Annual Report, Board of Trustees, 1940. 27 pp.

HARRISBURG, PA.—The Proposed Extension of the State Capitol Grounds. A Report of the Capitol Grounds Extension Committee, a Sub-Committee of the Pennsylvania State Planning Board, Department of Commerce. 1941. 49 p.

HOLLAND, MICH.—Annual Report, 1940. 67 pp.

HUTCHINSON, MINN.—Annual Report, year ending Mar. 31, 1941. 23 pp.

LITTLE ROCK, ARK.—Receipts and Disbursements, 1940. 24 pp.

MADISON, WIS.—"Madison, the Four Lake City." Illustrations by Paul E. Corrubia. 66 pp.

MARSHFIELD, MASS.—Annual Report, Town Officers, 1940. 151 pp.

MICHIGAN.—Units of Government in Michigan. Bureau of Government, University of Michigan. 1941. 43 p. 10c.

MIDDLEFIELD, MASS.—Annual Reports, 1940. 71 pp.

NEW LONDON, CONN.—Financial Reports, year ending Sept. 30, 1940. 38 pp.

NEW ROCHELLE, N. Y.—Auditor's Annual Report, 1940. 173 pp.

NEW ROCHELLE, N. Y.—Annual Report, 1939. 196 pp.

NEW YORK, N. Y.—American Museum of Health. Report for 1939 and 1940. The Museum, Flushing Meadow Park. 39 pp.

OAK PARK, ILL.—Annual Report, Department of Public Works, 1940. 82 pp.

OGLESBY, ILL.—Annual Report, year ending Apr. 30, 1941. 60 pp.

PHILADELPHIA, PA.—Art Jury, Annual Report, 1940. 31 pp.

PITTSBURGH, PA.—Housing in Pittsburgh.—Summary of Activities, 1941-41, Pittsburgh Housing Association. 26 pp. 10c.

PRESQUE ISLE, MAINE.—Annual Report, 1940. 68 pp.

SAN JOSE, CALIF.—Your Government—Municipal Report, 1940. 32 pp.

TEXAS.—1940 Texas Highway Accident Facts. Texas Highway Department, Austin. 20 pp.

TOPEKA, KANS.—Annual Report, 1940. 82 pp.

WESTMOUNT, QUEBEC, CANADA.—Annual Report, 1940. 44 pp.

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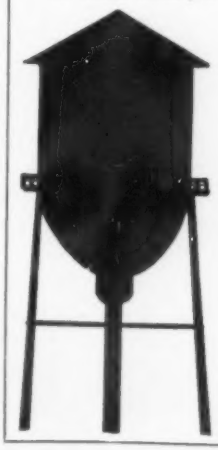

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MATHIESON CHLORINE'S 15-YEAR RECORD *at* BUCYRUS, OHIO...

"...high quality chlorine ...no sticky valves at any time... cylinders always in good condition..."

J. R. Lower, Supervising Chemist, City of Bucyrus Water Works, Bucyrus, Ohio

HTH comes in 5-lb. cans with replaceable caps, packed 9 cans to the case; also in 100-lb. drums.

●Here is a 15-year record to be proud of in any league, and it is submitted by J. R. Lower, Supervising Chemist, City of Bucyrus Water Works—the man who knows! Says Mr. Lower, "We have used Mathieson Chlorine for over 15 years. During that period we have received excellent service. The chlorine is of high quality and free from dirt. The cylinders are in good condition, and at no time have we found any sticky valves..."

Bucyrus, Ohio is one of many cities and towns where Mathieson Chlorine plays a vital part in contributing to the efficient operation of municipal water works. And we are particularly proud of the reference to cylinders and valves—for trouble-free cylinders and valves have always been an integral part of Mathieson Chlorine service.

In Mathieson Chlorine you are assured of a pure product and prompt delivery service in addition to well-kept cylinders and valves. Many water works also keep Mathieson Sanitation HTH on hand for quick efficient service when water mains break or other emergencies arise. It is a free-flowing, mobile chlorine carrier containing over 70% available chlorine. We will be glad to send you full information on these two Mathieson sanitation products —Chlorine and HTH.

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News and Illustrations

Items of Interest to City, Town and County Officials, and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings

W. Spencer Robertson (center) starts drive for funds for Service Clubs for Army and Navy. At his right, Walter Hoving, President of United Service Organizations, shakes hands with Thomas E. Dewey, New York District Attorney

Robertson Leads National Welfare Drive

A campaign to raise funds to staff and operate service clubs for members of the armed forces and defense workers got off to a flying start at a recent meeting at the Empire State Building, New York City, when national figures worked out the advance plans. In the accompanying illustration, W. Spencer Robertson, President of The Permutit Co., 330 West 42d Street, New York, who is Chairman of the National Board of the Y.M.C.A. and Chairman of the Executive Committee of the United Service Organizations for National Defense, Inc., is shown in the center.

New Bulletin on Small Buckeye Trencher

The Model 11 Utility Trencher of The Buckeye Traction Ditcher Co., Findlay, Ohio, is the smallest of the wheel-type trenching machines, and cuts a trench from 11½ inches to 22 inches wide and up to 5½ inches deep. This small, light, rugged machine, the manufacturers state, is ideal for gas and water mains and service pipe, and consequently is widely used by municipalities. The Model 11 digs in close quarters—down alleys, between buildings, and close to curbs. It is easy on lawns, pavements and walks; and its low height, 8 feet 6 inches, allows it to clear low-hanging branches and other obstructions.

Details of design and construction improvements to date on the Model 11 trencher are covered by a new bulletin, No. 4B-11, which will be sent by the manufacturer to readers requesting it.

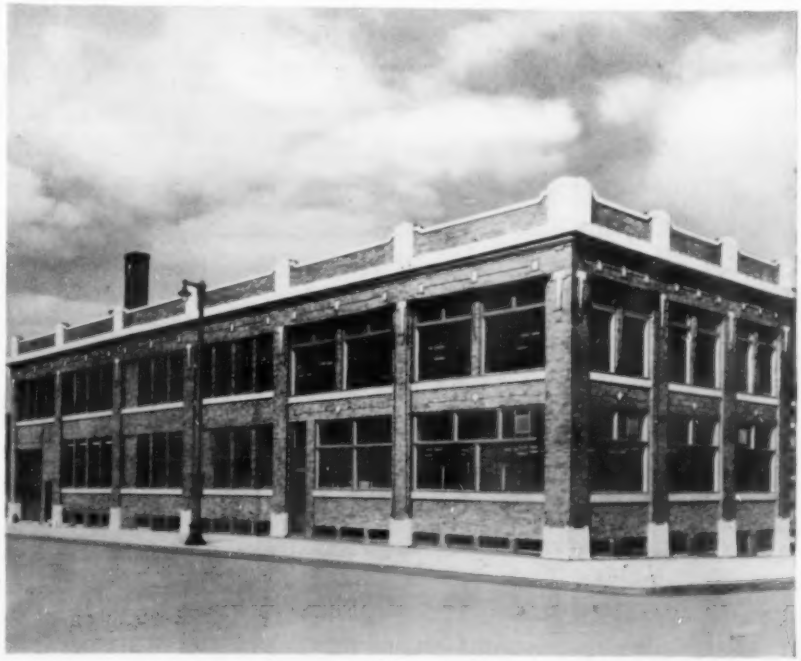
W. McK. White, Jr., Joins Father in White Mfg. Co.

W. McKean White, Jr., has been elected Vice-President of the White Mfg. Co., Elkhart, Ind. Mr. White was graduated from Purdue University as a Mechanical Engineer and will be Engineering Assistant to his father, W. McK. White, President of the White Mfg. Co. This firm manufactures portable asphalt plants, asphalt and tar kettles, concrete vibrators, front-end loaders for industrial tractors and aggregate driers.

Line Material Company Occupies New Offices

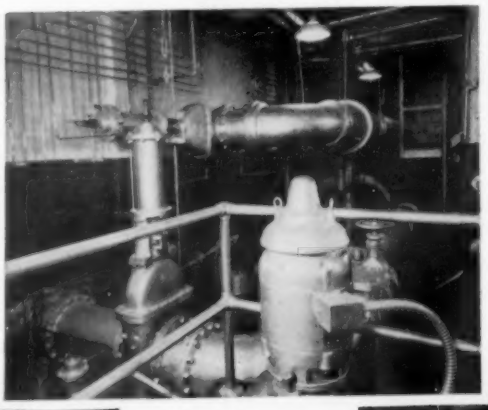
Administrative activities of Line Material Co. are now centered at 800 North Eighth Street, Milwaukee, Wis., in the building shown in the accompanying illustration. The new Home Office houses the company's directing officers, Sales, Purchasing, General Advertising and Sales Promotion, General Accounting, Adjustment, Order and Billing, Traffic, Cost, and Export Sales Departments. The office building, purchased by Line Material Co. in 1939, was completely remodeled and modernized for its present use. A new air conditioning system was installed, and fluorescent lighting is used throughout.

Expansion of the company's main plant and research laboratories in South Milwaukee, Wis., has absorbed the space formerly occupied by the Line Material general offices. In addition to the main plant the company operates plants at East Stroudsburg, Pa.; Gary, Ind.; Zanesville, Ohio; Birmingham, Ala.; Oneida, N. Y.; Barton, Wis.; Toronto, Canada; and Rio de Janeiro, Brazil. Warehouses and sales offices are located in 61 cities throughout the United States, 12 Canadian cities, and 22 cities of Central and South America, Australia, and New Zealand.



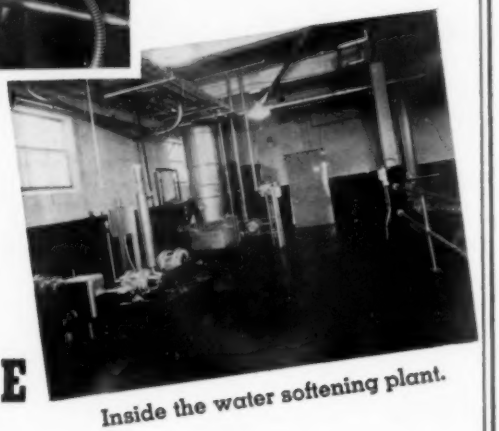
The New Home Office of the Line Material Co. in Milwaukee

Pomona in foreground of pipe gallery.



Municipal power plant with softening plant at right.

CARTHAGE DECLARES INDEPENDENCE

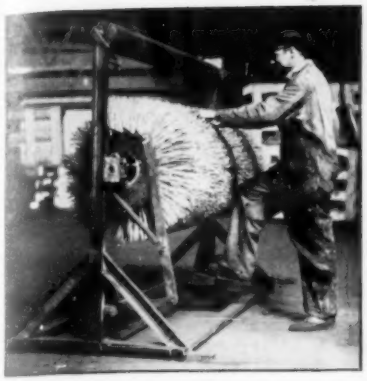


Inside the water softening plant.

Carthage, Mo., selected a Pomona Industrial Pump for backwashing filters in their water softening plant. A large quantity of water was needed at 10# pressure instead of the 80# pressure carried in the mains. It was desirable to operate the softening plant absolutely independent of main system. Backwashing of filters was necessary at periods of peak water consumption which would rob main system of high pressure. Through installation of this pump all three of these objectives were accomplished and greatly decreased operating costs have been effected.

POMONA
Water-Lubricated
PUMPS

POMONA PUMP CO., 120 Broadway, New York City. Plants at 4301 So. Spring Ave., St. Louis, Mo. and 206 Commercial St., Pomona, California.



This brush-filling machine for road brooms is operated by one man

Adjustable Machine for Refilling Road Brooms

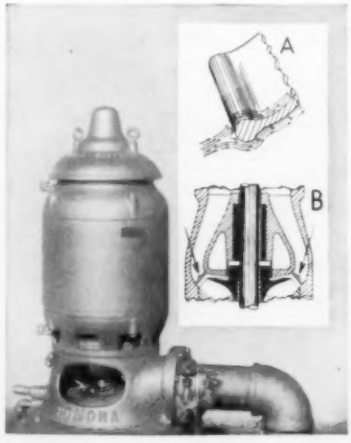
The Littleford broom-filling machine shown in the illustration is made entirely of metal, and can be adjusted to fill either 6-foot, 7-foot, or 8-foot brushes. It can be operated by one man, to refill either fiber or wire brushes, enabling a city to cut down on costs by purchasing these materials in large bundles and using a man from the regular city force to refill broom cores. Each time the pedal is pushed down, the brush revolves a few inches, so that a handful of brush fiber can be placed under the hemp winding rope which holds the fibers in place. When the brush core is to be filled with wire, a wire rope is used.

Littleford Bros., 500 East Pearl Street, Cincinnati, Ohio, will be glad to furnish full information on this machine.

Improved Pump Design Increases Efficiency

The Pomona Pump Co., St. Louis, Mo., and Pomona, Calif., has recently been granted patents covering design improvements which eliminate hydraulic losses in pumps, increasing efficiency as much as 10 per cent. These improvements, now included in all sizes of Pomona vertical turbine pumps, involve fundamental design changes in the guide vanes. By forming the advanced ends of these guide vanes in a bulbous shape, greater uniformity of flow pattern is secured, friction is reduced, and efficiency of fluid lift is increased. Furthermore, because of the recessive curve at the rear of the bulb-shaped vane, eddy currents are not developed to produce friction losses.

Since the new guide vanes are an inherent part of the pump bowl assembly, owners of vertical turbine pumps may take advantage of the new design by substituting a new bowl assembly. The manufacturer will be pleased to supply explanatory literature upon request.



Typical Pomona vertical pump, equipped with new guide vanes. Inset A shows the bulbous-shaped end of the guide vane, and inset B a cross-section of bowl assembly, with arrows indicating the location of the guide vanes

Device Demonstrates Water Use to Customers

Will A. Hutchins, Superintendent, Water Department, Freeport, Ill., has created a device which demonstrates to customers just what happens when a faucet drips or is left running wide open. He has shown, conclusively, that when consumers can see the causes of many of their high water bills and also how bills can be reduced, the most belligerent complainants usually become mollified.

The equipment which Mr. Hutchins uses is very simple. He has set up in the lobby of his office a kitchen sink furnished with various devices. The regular kitchen faucet utilized has immediately back of it a union in which small orifice plates down to 1/64-inch can be inserted. The orifices are drilled to give approximate rates of flow of 1/8-, 1/4-, 1/2-, 3/4- and 2 gallons per minute. When Hutchins opens the faucet wide, the customer invariably is astounded by the quantity of water passing through the very small orifice.

(Continued on page 121)

Supt. W. A. Hutchins of the Freeport, Ill., Water Department, demonstrates to consumers some common causes of water waste

Today leading engineers specify

SterElatorS by Everson as the last word in automatic, semi-automatic and manually-operated sterilizing equipment for Waterworks, Sewerage Plants and Swimming Pools. This complete line includes better, safer and more accurate equipment in all capacities.

Write for Bulletins.

Everything for the Swimming Pool

- ☐ Complete Re-circulating Systems, including patented fittings that simplify piping; filters, coagulators, hair and lint catchers, etc.
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- ☐ Pool Accessories and Equipment —Ladders, Diving Stands, Replacement Boards, Foot Baths.
- ☐ Suction Pool Cleaners both portable and "built in."
- ☐ Safety Equipment — Life line, buoys, rescue pole.
- ☐ Tested Chemicals — a complete line.
- ☐ SterElatorS — electric, chlorine, chemical types.

SterElatorS by Everson

Everson Manufacturing Co.

203 West Huron St., Chicago, Ill.

"...AND SOME OF THE MOST IMPORTANT ADVANCES HAVE BEEN MADE IN VERY RECENT YEARS"
"YES, I BUILT SOME MIGHTY GOOD BRICK PAVEMENTS IN MY TIME AS AN ENGINEER...BUT YOU YOUNGER FELLOWS HAVE IMPROVED THEM A LOT SINCE THEN"
"MODERN BRICK DRIVES SWELL"

New, Velvety Riding Qualities Plus Historic Low Cost

Improved methods of construction in the last few years have ushered in a new era of brick pavements. These modern brick pavements have safe, velvety riding qualities plus brick's historic long life and lowest cost per year of service.

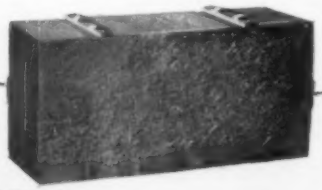
Some of these new methods are rolling on boards . . . improved mastic cushions . . . surface removal of excess filler . . . wire-cut vertical fibre lug brick . . . and vibrated monolithic brick construction for highways.

The cumulative results of these new techniques give modern brick pavements a perfect surface for any vehicle at any speed *and the surface stays that way.*

Hundreds of modern brick pavements have been built in the past ten years. They are starting towards a golden anniversary of trouble-free service. Experience says they will reach that anniversary—perhaps pass it. For all commonly used paving materials, vitrified brick has by far the greatest resistance to weather damage, which is the starting point for most paving failures.

If you would like to receive free literature on modern brick pavements and their construction, write to the National Paving Brick Association, National Press Building, Washington, D. C.

Modern Brick Pavement West 6th Street, Jamestown, N. Y. This is a resurface job.



VITRIFIED BRICK
THE MOST SATISFACTORY PAVEMENT

(Continued from page 119)

At the left of the sink a rate of flow indicator is mounted with a discharge going directly into a 1-quart fruit jar placed in the sink. On the office wall is an electric clock having a full-sweep second-hand so that Mr. Hutchins can change orifices and let the customer time the rates of flow into the fruit jar. A ⅝-inch Neptune water meter with a full-sweep hand register is installed in the line supplying the faucet to measure and totalize the volume of flow, in this way, indicating the progressive total amounts of faucet "leakage." A lettered showcard above the exhibit graphically emphasizes the impressive monthly cost of even the smallest leak. Another Neptune meter is used by Mr. Hutchins to interest the customer in the internal construction and operation of a water meter.

Superintendent Hutchins' "high bill combating device" has more than justified its modest installation cost in Freeport, Ill., and water departments of several other cities have already expressed their intention of adopting it.

Diesel-Electric Units for Standby Service

Municipalities are faced today with an increasing need for assured standby service for the production of electric current to operate units in water works, sewage-treatment plants, and other necessary municipal utilities. Bardco Mfg. & Sales Co., Los Angeles, Calif., has produced a series of automatic or manual starting diesel generating plants from 5-kw to 200-kw capacity, equipped with Bardco automatic starting devices, automatic transfer switches, patented voltage regulators, and automatic stopping switches which stop the emergency standby plant when normal power is resumed. Some of these Bardco standby installations consist of two fully automatic units which may be operated in parallel if desired. The automatic feature will start the generating plant and put it "on the line" in three seconds or less, according to the manufacturer, without any manual attention from an operator.

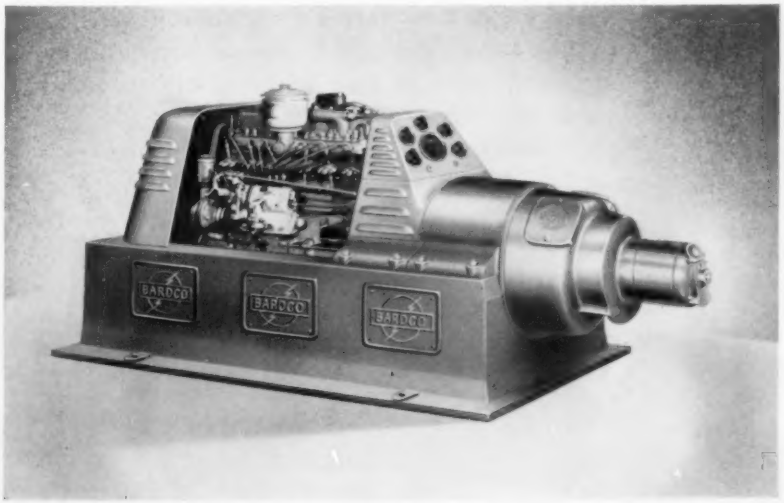
Bardco Master generating sets are made with full diesel, multi-fuel, and Hesselman oil-burning units, the latter made by Waukesha. The generating plants are manufactured by The Master Electric Co., of Dayton, Ohio.

Goodrich Announces Flexlock Distributor

The B. F. Goodrich Co., Akron, Ohio, has announced that the newly formed Flexlock Corporation, with offices at 411 East Market Street, Akron, has been given the exclusive distributorship for the patented Flexlock rubber gasket manufactured by Goodrich. T. D. Nathan, inventor of the gasket, who has been engaged in sales engineering for the Goodrich Company in connection with the product since 1934, is General Sales Engineering Manager of the new Flexlock Corporation.

The gasket is so designed that pipe couplings can be assembled simply and easily in the field and at the same time provide a flexible seal not disturbed by any new conditions of the pipe. The gasket, like a rubber band, is laid over the spigot end of the pipe and is provided with a number of circumferential ribs which fold into place when the next section of pipe is forced over them, locking the two lengths together. These ribs resist pressure thrusts and soil stresses.

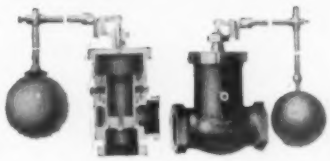
The Flexlock gasket is manufactured in sizes ranging from ¾-inch to 108-inch pipe, and can be applied to iron, copper, brass, and reinforced concrete pipe. It is designed for either light-duty or pressure couplings. The former are used principally in irrigation piping, sanitary lines, sewer lines, and low-pressure water lines; while the latter, high-pressure couplings, have been installed in municipal and industrial water systems and for miscellaneous pressure services. They are made in either natural or synthetic rubber, the latter having special application on oil-lines where the solvent action might affect the natural rubber but leaves the synthetic unaffected.



A Bardco 25-kw Diesel Generating Plant for Emergency Standby Power

See pages 56 and 57 of our new 96-page catalog for information on these

STANDARD COLD WATER FLOAT VALVES



Furnished in sizes ½" to 2" bronze, screwed ends, these Float Valves are recommended for cold water service where minimum inlet pressure is not less than 10 pounds per square inch.

Valves may be arranged with remote pilot control valve in lieu of integral lid pilot valve as shown; also, to function on differential water levels—that is, to close at desired full-tank level, but not reopen against influent pressure until the tank level lowers to a predetermined depth.

GOLDEN-ANDERSON VALVE SPECIALTY CO.
Fulton Building Pittsburgh, Pa.

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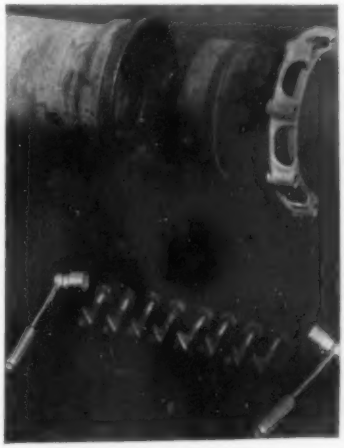
JOINT LEAKAGE



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for Cast Iron Pipes and Fittings also Leak Clamps
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National defense activity has developed so fast that already there's a tremendous step-up in traffic! Not only are military men and supplies putting thousands of cars and trucks on streets and highways — but hundreds of thousands of private autos are carrying office and industrial workers to defense plants.

Harley-Davidson Police Motorcycles are the most practical and economical vehicles for meeting today's defense-program traffic problems. Their speed and dependability quickly take officers to patrol duty in congested areas — and provide facilities for quick concentration in case of fires, explosions and other emergencies. Equip your force to meet this new, vital defense demand. Phone your Harley-Davidson dealer NOW!

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Milwaukee • Wisconsin

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Why not remember to mention THE AMERICAN CITY?

The White Tractor - Mounted Front - End Shovel

A Tractor Shovel for Municipal Use

Front-end tractor shovels made by the White Mfg. Co., Elkhart, Ind., are equipped with a ⅜-yard struck-measure 42-inch-wide bucket, and can be readily attached to four models of wheel-type industrial tractors: Case D1, International I-6 and I-30, and Minneapolis-Moline UT-1. The clutch for raising the bucket is controlled by one lever; another lever releases the bucket to discharge the load, and a brake holds it at any point of lift. The shovel automatically resets on its return to loading position.

According to the manufacturer, this shovel can excavate, carry, hoist, load, and backfill. Complete data are contained in an illustrated circular, No. 36, recently issued by the White Mfg. Co. Copies may be obtained by writing direct to the manufacturer and mentioning this item.

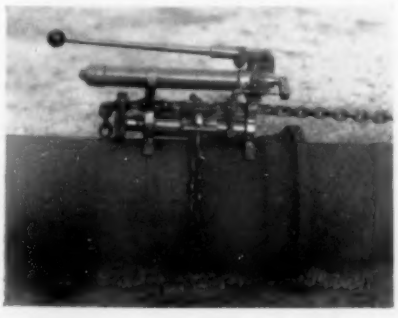
New Hydraulic Tool Aids Pipe Assembly

In order to make available the advantages of roll-on-rubber ring joints to the larger sizes of Mono-Cast pipe, the American Cast Iron Pipe Co., Birmingham, Ala., has announced a hydraulic type tool which aids in assembling and disassembling 8-, 10- and 12-inch pipe of this type. The procedure is the same for the 2-, 3-, 4- and 6-inch pipe except for the type of tool used.

One end of the pipe is provided with a special socket, and the other end with a plain end spigot. A cone is used to roll the round rubber gasket to its proper position on the spigot. The spigot is then forced into the socket of the adjoining pipe by use of the hydraulic pulling harness. The movement of the spigot into the socket changes the round rubber ring into a link shape and rolls it into position. This automatically sets up sufficient compression in the rubber to seal the joint. The gasket comes to rest against the shoulder or seat provided in the socket. A strand of braided jute is then calked against the rubber and wedged below the restriction ring provided in the socket. The rubber gasket is thus confined and under compression in the joint, which are the two prime requisites for long-time service. The remainder of the joint space is packed with a bituminous joint compound which remains soft and pliable and excludes dirt and ground water from contact with the joint material. The space occupied by the bituminous compound is designed for calked lead, cement or sulfur base compounds, should they be preferred.

For cold climates where electrical thawing of mains and services is desirable a ¼-inch square cold lead strip may be calked in against the jute to provide an electrical circuit at the joint.

Deflection in the roll-on-rubber ring joint is provided by a flared socket, the gasket being the fulcrum point. The pipe is held in approximate alignment for assembly, but after assembly will easily deflect and remain tight under pressure.



The Hydraulic Type Tool for Assembling Roll-on-Rubber Ring Joint Pipe for 8-, 10-, and 12-Inch Pipe

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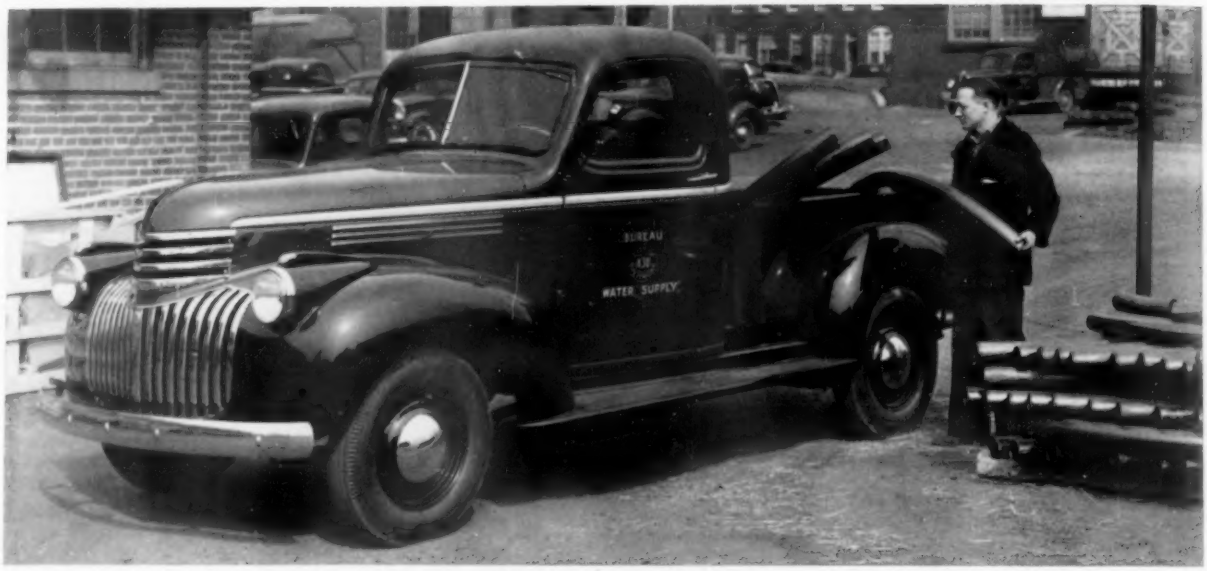

FEATURES

★ 90-HORSEPOWER VALVE-IN-HEAD ENGINE . . . 174 FOOT-POUNDS OF TORQUE ★
NEW RECIRCULATING BALL-BEARING STEERING GEAR ★
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Ask your Chevrolet dealer about today's low prices—*today*.

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CHEVROLET TRUCKS

"THRIFT-CARRIERS FOR THE NATION"

T. W. Rolph, Newly Elected Vice-President of Holophane Co.

Holophane Elects Rolph as Vice-President

Thomas W. Rolph has been elected Vice-President of the Holophane Co., 342 Madison Avenue, New York, by the Board of Directors. Mr. Rolph has been associated with Holophane for many years, and during much of this time was located in Newark, Ohio. He joined the organization after graduation from Cornell in 1907, and for six years was an illuminating engineer working on the application, design and testing of Holophane products. After several years with the General Electric Co. and Strong Mfg. Co., he returned to Holophane as Managing Engineer of the Street Lighting Department in Newark. Since that time he has made many contributions to illuminating engineering progress and in February, 1940, was awarded a plaque by the National Association of Manufacturers, as a Modern Pioneer.

Mack Tank-Trailer Unit Cleans N. Y. C. Tunnel

Confronted with the problem of cleaning more than 500,000 square feet of glass tile after the completion of the Midtown Tunnel, New York City Tunnel Authority engineers decided that some mechanical means of accomplishing this gigantic task was necessary. The problem was finally solved by the development and construction of the modern mechanized washing-and-spraying machine shown in the accompanying illustration.

This special apparatus was manufactured by Mack Trucks, Inc., 34th Street and 48th Avenue, Long Island City, N. Y. A Mack model CJ chassis, carrying a 2,500-gallon tank, was used. The tank is divided into two compartments, one holding 750 gallons of soap solution and the other 1,750 gallons of clean water. In addition to the propulsion power supplied by a Mack Thermodyne engine, two auxiliary gasoline engines are used in operating the washer: a 4-cylinder engine operates the pump for the soap mixture and clean water spray, and a 6-cylinder engine is used for the air compressor which supplies air for driving the scrubbing and cleaning brushes. From bumper to bumper the tank-trailer combination is 48 feet long.

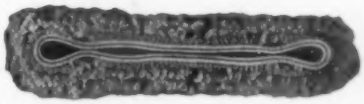
Before the construction of this washing and spraying machine, it required a crew of 14 men working 8 hours a night for 6 nights a week just to keep the walls of the tunnel clean. With the mechanized unit, walls can be cleaned more effectively and quickly and, in addition, ceilings can now be cleaned regularly.

The Special Washing-and-Spraying Unit Manufactured by Mack Trucks, Inc., for Cleaning the Walls and Ceiling of the New York Midtown Tunnel

New Detroit Agent for Morris Machine Works

Morris Machine Works, Baldwinsville, N. Y., manufacturers of centrifugal pumps, hydraulic dredges, and steam engines, has announced the appointment of L. J. Lynch as its new representative in the Detroit District. Mr. Lynch is located at 403 Kales Building, Detroit, and his telephone number is Randolf 6021.

WHY—



The above illustration shows the position of the rubber lining in

Bi-Lateral Fire Hose

when it is held in a flattened position between calls into service. This is why we can save a city one replacement, because the hose will give double the service of any hose constructed under the old method.

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The Burroughs representative is fully qualified to discuss with you any or all of these problems, and to show how other municipalities are using Burroughs machines to advantage. For complete information, call the nearest Burroughs office.

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2 **A Centralized Tax Collection Plan.** . . . As used by the City of Erie, Pennsylvania.

3 **Step-By-Step Control Under A Modern, Simplified Tax Accounting System.** . . . A report from Lake County, Indiana.

4 **Tax Accounting In Montreal, Canada.**

5 **Streamlining The Assessor's Office.** . . . Tells of modern methods installed by the District of Columbia.

6 **Real Estate Tax Accounting.**

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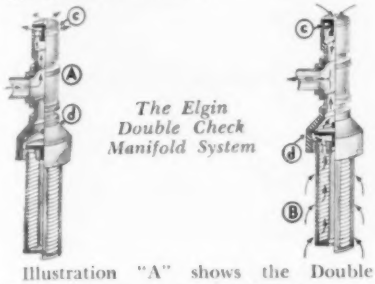
Increased Efficiency for Zeolite Softening

A device, simple in construction, has been developed for use in pressure zeolite water softeners which the manufacturer claims, gives the softener 25 to 35 per cent more softening capacity, has cut salt costs 10 to 25 per cent, has eliminated the loss of zeolite in washing, and has put an end to the packing and channeling of the zeolite bed. This device is known as the Elgin Double Check system and consists of a strainer system with two check-valves, illustrated below.



The Elgin Double Check Manifold System

Illustration "A" shows the Double Check strainer as it is installed in the service position immediately above the top of the zeolite bed which just touches the bottom of the strainer. The top check-valve (c) is open, while the bottom check (d) is closed. In this position water is being admitted over the top of the bed to flow through the zeolite and thus be softened.

When the zeolite has reached its limit of exchange, the flow of water is reversed and the softener is backwashed at a high rate, during which the Double Check strainers are in the position shown in illustration "B." In this operation the bottom check valve (d) is open while the top check (c) is closed, and the bed is lifted up around the strainer, which prevents the zeolite from being lost during the backwash. Following the backwash operation, salt solution is admited for regeneration of the zeolite bed.

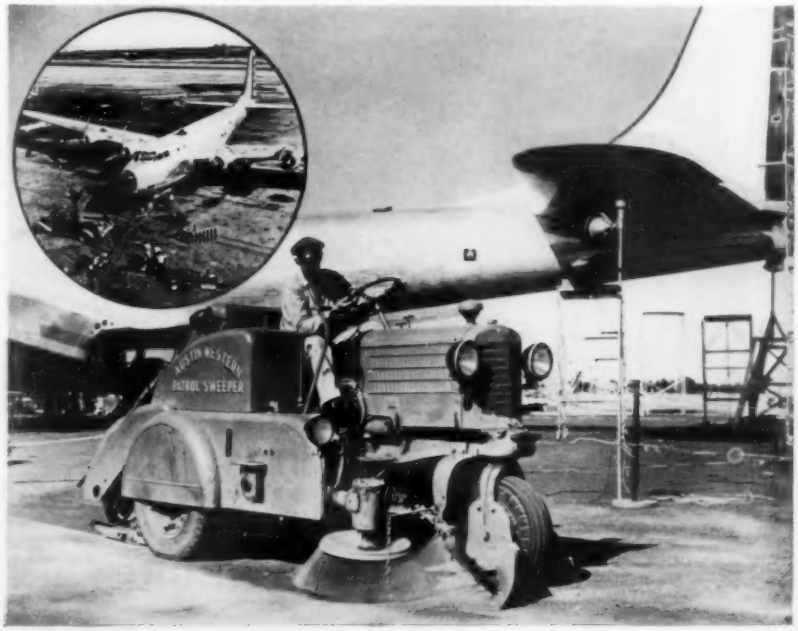
This Double Check principle is described and illustrated in greater detail in Bulletin No. 605 which may be secured from Elgin Softener Corp., Elgin, Ill.

Sweeper Cleans Up Around Army Bomber

The accompanying illustration shows the Army's new B-19 bomber and flying fortress, the world's largest, rapidly nearing completion at the Douglas Aircraft Co., Inc., plant at Santa Monica, Calif. The bomber is a supercharged, substratosphere, air-conditioning, cannonading, armored ship, with a heavy tail assembly which towers as high as a three-story building. In addition to a crew of ten it can carry 125 armed men. It weighs 82 tons and is capable of flying non-stop from Los Angeles to London with 18 tons of bombs and back again without refueling.

An example of the vigilant attention given to details is shown by the care exercised to keep the hangars, approaches and runways at the Douglas plant clean and free from discarded bolts, small metal parts and stones which could be sucked up by the powerful propellers, and which might result in harm or injury to ships and men. To clean up these large areas quickly, an Austin-Western patrol sweeper, made by the Austin-Western Road Machinery Co., Aurora, Ill., is used, equipped with a dust-laying spray and revolving pick-up brooms.

The accompanying photograph is approved for release by the Air Corps, U. S. Army, and by Douglas Aircraft Co., Inc.



An Austin-Western patrol sweeper picks up nuts and bolts around the new Douglas Army bomber

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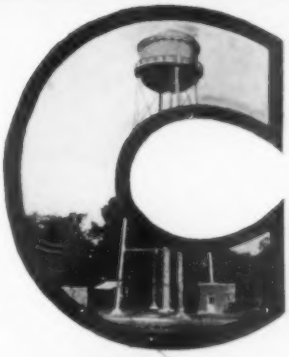

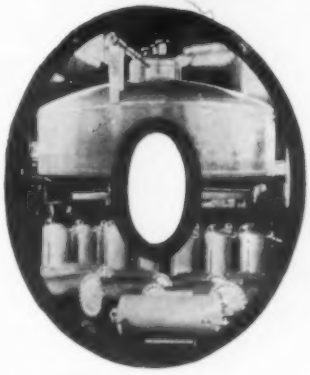

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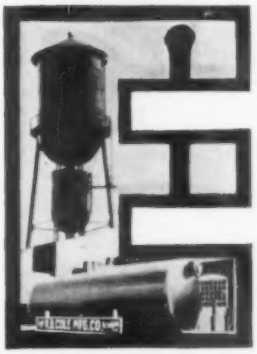

Write for "Tank Talk" — 6-A, or let us figure on your requirements.

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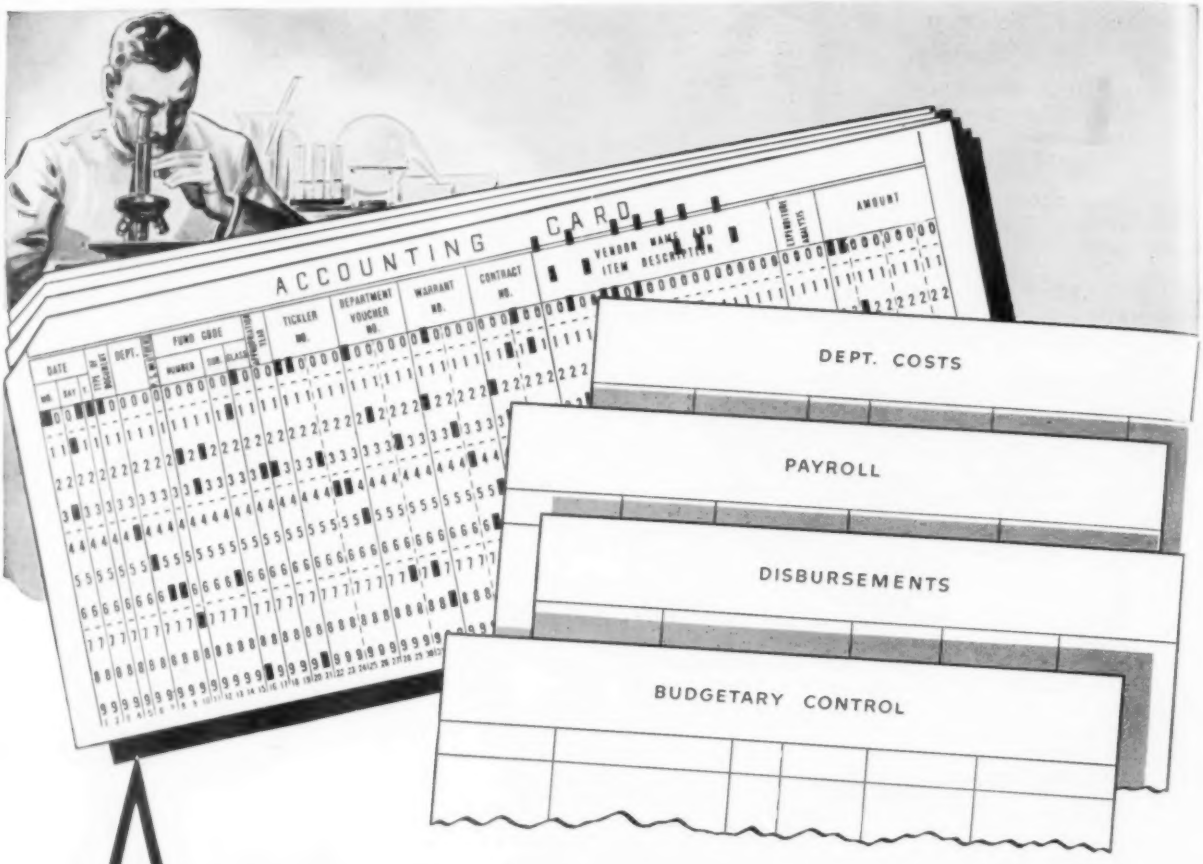

Analyze Municipal Expenditures

through punched card accounting

As a means of keeping a closer check on all expenditures, governmental administrators are urged to investigate the advantages now offered by the punched card method of accounting. By this method, a basis is established for the allocation of available or anticipated funds and to control departmental expenditures.

Punched cards provide for speed and accuracy in handling Accounts Payable, Equipment Costs, Payroll Accounting, Tax Accounting and numerous other important procedures. Your nearest International Representative will be glad to give you complete information. Call him today.

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The New Empire "Streeemline" Meter

National Meter Division Introduces New Meter

The National Meter Division of the Pittsburgh Equitable Meter Co., 4207 First Avenue, Brooklyn, N. Y., exhibited its Empire "Streeemline" Meter for the first time at the Toronto Convention of the American Water Works Association in June. The manufacturer announces that this four-bolt, frost-protected meter is a thoroughly modernized version of the well-known National Empire Water Meter, embodying the same basic principle of oscillating piston measurement that has been time-proven in hundreds of thousands of Empire meters. Owing to the scientific design and proportion of the measuring chamber, with dual inlet and outlet ports, the accuracy claimed for this meter is said to be even superior to that of Empire meters built in the past. The trade name "Streeemline" was chosen to describe the smooth flow lines and accuracy and head-loss curves.

Extremely compact over-all dimensions, made possible by a reduction in the number and size of interior castings, is one of the new meter's outstanding features. All working parts are fitted as a complete unit, without use of screws, before being inserted in the outer case. The cast iron bottom plate, protected against corrosion with a coat of Resistin, is designed to break in event of freezing. Since both the measuring chamber and the enclosed intermediate gear train housing utilize snap joint construction, without screws, the parts will separate when the frost bottom plate breaks, thereby giving protection to the working parts against damage or distortion.

The Empire "Streeemline," for domestic services, is furnished with either straight or circular reading dial type register, with a large red center test hand recording in gallons, cubic feet, or other units of measurement. Literature completely describing and illustrating the new meter will be sent to those interested, by the National Meter Division.

Speed up HIGHWAY MARKING

M-B Street Markers

Handy, versatile machines for all types of street striping and paint spraying jobs. Two types—hand-propelled and self-propelled. Easy, one-man operation. Write for Bulletin No. 112.

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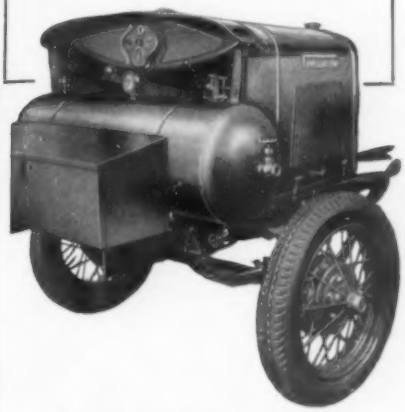

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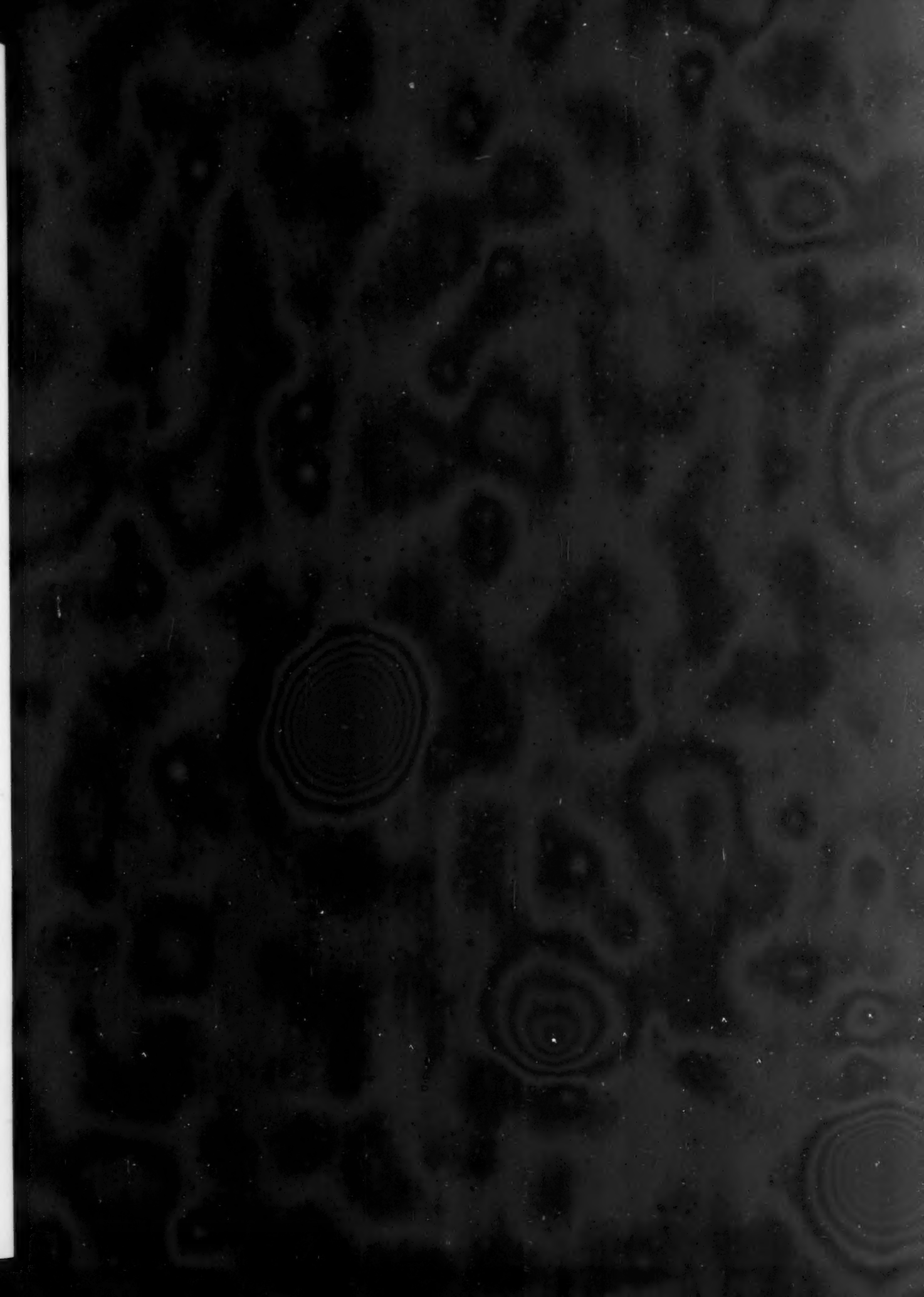

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WHAT THE FIRE CHIEF IS THINKING ABOUT—

Why National Defense Is a Municipal Problem

See pages 7, 15, 55, 58

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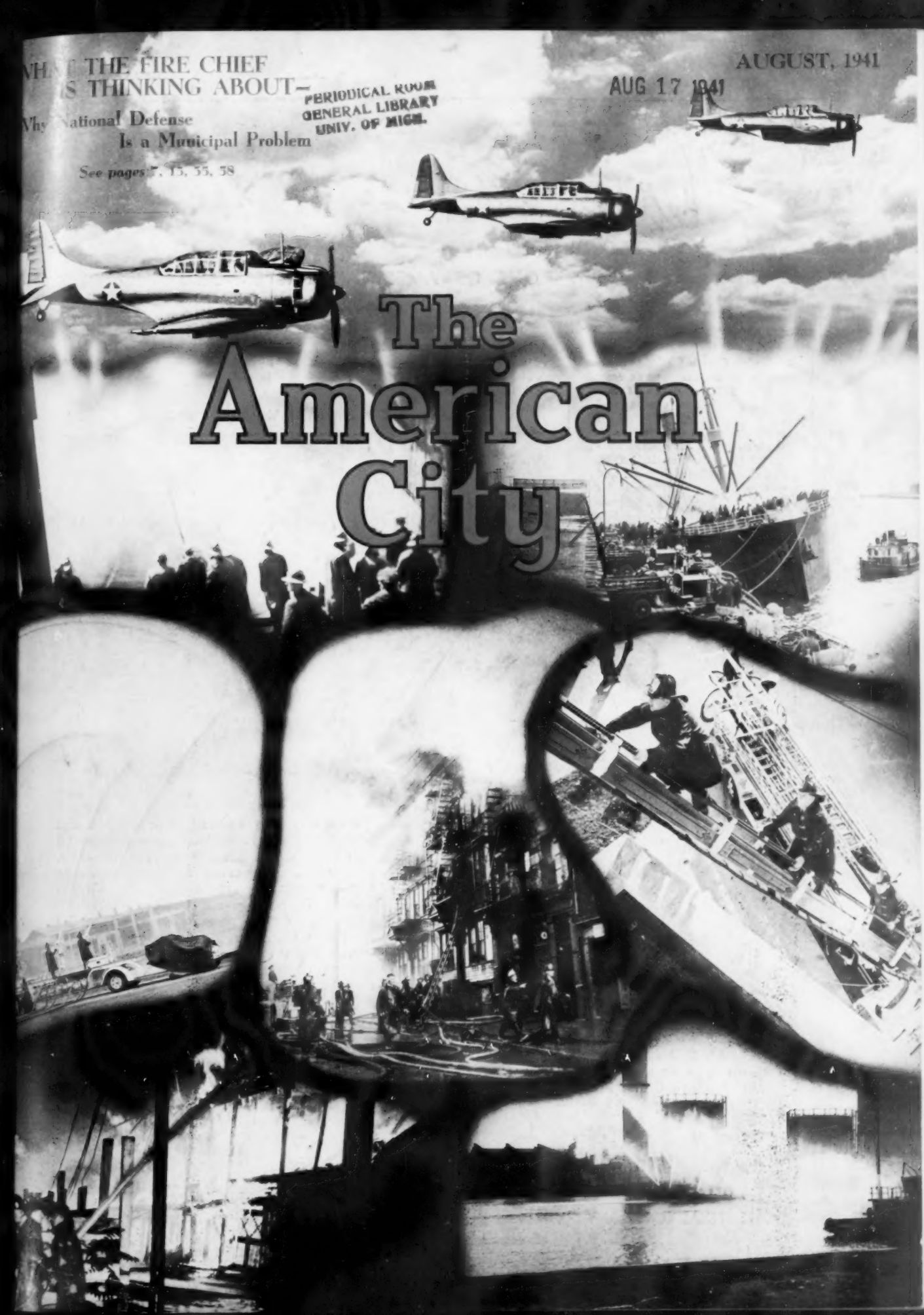

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